

# University News

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PHILIP G. ALTBACH

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**AND**

B) The Candidates should have passed the GATE examination with minimum score of 80 per centile

**OR**

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**OR**

Foreign nationals having equivalent degree. Selection of foreign nationals is done on the guidelines provided by Government of India from time to time. Foreign nationals should apply through proper channel

**2. Diploma in Electronics Production and Maintenance (DEPM) :** The course is recognised by AICTE. It is a three year (Six Semester) course which grooms students for a career as Production/Maintenance supervisor of Design Assistant in electronics or allied industry. The Course commences in August 1998.

**Eligibility :** A) Standard Xth passed from a recognised Board with a minimum average score of 50% (relaxable to 45% for candidates belonging to SC/ST category only) in Mathematics and Science subjects. Those who have appeared for the standard Xth examination and are awaiting their results to be declared before **June 30, 1998**, are also eligible to apply. B) The Candidates should not be less than 15 years old on **July 01, 1998**, and upper age limit on the same date is 18 years. Relaxable to 20 years for SC/ST category

**Selection :** Selection of candidates for both the above courses will be made on the basis of an entrance test followed by personal interview to be conducted in Aurangabad. The Entrance Test and interview for M Tech will be conducted in **July 1998** and is basically an aptitude test in electronic product design. The Entrance Test for DEPM course is two hours duration and covers Mathematics and Science of SSC standard. It will be conducted in the month of **June 1998**. The test may be conducted in Nagpur and Pune also, provided the number of applicants from these regions justifies the same. Personal interviews are conducted based on the performance of entrance test

**DOEACC Courses :** "A" and "B" level course under the scheme is of one year and three years duration respectively. Successful candidates in the DOEACC examination are awarded the Certificate/Diploma under the aegis of DOEACC

	"A" Level	"B" Level
<b>Duration</b>	One year from June, 98	Three years from June, 98
<b>Timings</b>	Full Time/Part Time	Full/Part Time
<b>Eligibility</b>	Govt. Recogd Poly Engg Diploma after 10th (No concurrency) OR Govt. Recogd Poly Engg Diploma after 10+2/Graduate (may be concurrent)	Govt. Recogd PPDCA/ Govt. Recogd PGDCA/ Govt. Recogd. Poly Engg Diploma after 10+2/Graduate (any stream)

**Selection Criteria :** Selection of candidates for both the courses will be made on basis of a written test to be conducted at Aurangabad. It will be conducted in the month of **June 1998**.

**HOW TO APPLY :** The application forms/brochure can be had in person/by post from **Administration I/c, CEDTI, University Campus, Aurangabad-431 004**. Candidates desire to obtain the forms by post must apply along with self-addressed envelope of 25x30 cms size with postal stamps of Rs 20/- The cost of the application form/brochure is Rs 200/- (Rs 100/- for SC/ST category candidates only). This cost must be in the form of Demand Draft in favour of "Director, CEDTI, Aurangabad-431 004". Payment through Postal Order/Money Order/Cheques is not acceptable. The course applied for should be superscribed on the envelope. Candidates belonging to SC/ST category must substantiate their claim by enclosing a certificate issued by a competent authority while applying for obtaining the form/brochure, otherwise the form/brochure will not be issued. The application form/brochure may be obtained well in advance so that filled in applications should reach CEDTI, Aurangabad on or before the last date prescribed for submission for the respective Courses

**Submission of Forms :** The filled-in applications in prescribed forms should be submitted to "The Director, CEDTI, University Campus, Aurangabad-431 004". The last date of receiving the filled-in applications is **15th June, 1998** for M Tech, **30th April, 1998** for DEPM and **25th May, 1998** for "A" & "B" level Courses. Incomplete and applications received after last date prescribed will not be considered

CEDTI is not responsible for postal delays. Interim enquiries will not be entertained. The decision of the CEDTI Aurangabad in respect of selection and closing of admission will be final. Canvassing in any form will lead to disqualification. Candidates will have to appear for entrance test/interview at their own expenses

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Editor :  
SUTINDER SINGH

# A Coming Student Revolution?

Philip G. Altbach\*

It is time to consider the impact on students of the various academic crises affecting higher education worldwide. The student political activism of the 1960s is but a dim memory now, but the fact is that students can react, sometimes violently, to campus change. There are signs that the sleeping giant may be about to awake, adding an important dimension to the academic equation where student activism is a factor. It is surprising that students have been so quiet worldwide as campus conditions deteriorate. There are signs that students are again becoming a force to be considered.

The most dramatic example of student reaction now is in Germany, where the largest student demonstrations since the 1960s have taken place in the past few months in reaction to the rapidly deteriorating conditions in German universities. Massive demonstrations in Berlin, Frankfurt, and other cities have involved thousands of students in protests against budget cuts, overcrowding in the universities, and in general the neglect of the universities by German authorities, who have been focused on economic problems and the challenges of reunification. It has been widely recognized that the universities have suffered dramatically in recent years. They have been forced to absorb major increases in student numbers without any more money. This has led to overcrowding. Students now take seven or more years to finish their first degrees. Some are even choosing to study in other countries, such as the Netherlands, where academic conditions are better.

After suffering silently for almost a decade, the current wave of demonstrations has forced governmental authorities to take notice. So far, the only reaction has been finger pointing by federal and state authorities, but continuing student pressure will bring some kind of concrete steps at some point.

French students have occasionally been active as well. Students, over the past decade, have taken to the streets to protest against several government proposals for reform. The proposals were aimed at rationalizing the French university system, and making student funding income related. Students opposed the reforms, and succeeded in defeating them. French politicians, regardless of party, are reluctant to propose any changes in current policy for fear of arousing student opposition.

It is somewhat surprising that students in other European countries have not taken to the streets. Throughout Europe, universities have experienced a combination of increased enrolments and steady or decreased funding. Italy has been especially hard pressed, and the conditions of teaching and learning in Italian universities are among the worst in Western Europe. British higher education has been profoundly changed in recent years. Margaret Thatcher's Conservatives totally reorganized the higher education system, creating new universities by upgrading the polytechnics to university status. Patterns of funding were changed as well. Students in both sectors were affected. The new Labour government of Tony Blair announced the imposition of tuition fees beginning this year. This is the first time that British students will

(Contd. on page 7)

\*Monan Professor of Higher Education and Director of the Center for International Higher Education, Campus Hall, Boston College, Chestnut Hill, MA 02167 USA.

# Use of Multi-Media in Distance Education

Qaseemuddin Haider\*

Broadly speaking there are two types of distance education institutions in our country — correspondence institutions and open universities. Correspondence system has been in vogue in this country for more than two decades. Being part of the conventional education system it has relied by and large on the printed materials with occasional support from face to face instruction. With the establishment of the open universities the scenario has changed, because the open universities adopt multimedia approach. In this system, the students are scattered all over the country or many countries and they are not required to attend classroom instructions. While there may be some face to face interaction, by and large, the system depends on teaching the students to learn on their own. As a result, choice of the media is crucial in this system. The credibility enjoyed by distance education today is mainly because of its multimedia approach. Media eliminates the problems of distance and carries education to the doorsteps of the learners. Blend of media gives maximum benefits to the students. The multimedia approach not only multiplies classrooms and teachers but also creates enthusiastic environment for the learners in distance teaching. The multimedia used in open universities and other systems of distance education where techniques of distance education are followed in imparting education are :

1. Print Material
2. Radio
3. Television
4. Audio-Video Cassettes
5. Computer
6. Satellite

## *Print Material*

Print material are the backbone of all open universities and distance education institutions. The main advantage of print materials that these books can be read and reread at convenience by the learners. With the latest development in printing technology, material is being brought out with beautiful covers, and catchy captions. In the words of Holmberg

“By far the most important medium in distance education courses is the printed word. This applies to conventional correspondence study, as well as to highly sophisticated multi-media presentation like courses of open universities.” The unique character of Indira Gandhi National Open University (IGNOU) print materials is due to the involvement of the team of experts preparing each course keeping in view the interest of the target audience. Each IGNOU course has a course design committee headed by the Vice Chancellor involving other experts & professionals and a course preparation committee of the course concerned. All aspects of courses are discussed in detail by the subject and language experts and decisions are arrived at in consultation with School of Distance Education and Communication Division. Overseas Development Administration (ODA) consultants are of the opinion that the materials produced in IGNOU are second to none in the world.

## *Radio*

In distance education, radio is used as an important component of multimedia. The advantage of the radio is that all over the world it is within the reach of the common man, and can be carried from place to place easily. As a result, we find that open universities in the west and in Asia have relied on it quite heavily. Since its inception the UK open university (UKOU) used radio “as one of a handful of media in its multi-media courses”. In our country also it is most widely owned medium in rural and remote areas as it is very inexpensive and can use dry cell batteries wherever there is no power supply. Some of the Directorates of Correspondence Courses in our country broadcast the lessons to supplement the print materials for their distance learners at fixed times. In the Andhra Pradesh open university (APOU), it is used for six hours a week. IGNOU radio broadcasts are also on the air presently from AIR Hyderabad, Bombay and Shillong thrice a week at fixed times. In recent years, it has been observed that in some open universities, like UKOU, the use of radio is diminishing. It is also found that listening rate of broadcast is also declining. But experience in this regard is not uniform. For example, in Thailand and China, it continues to be one of the important mediums of education.

There are several reasons for the decline of its use in certain places. The most important one is in-

\*Indira Gandhi National Open University Regional Centre—Bihar, 170-A, Patliputra Colony, Patna-800 013.

convenient time of broadcasting it is either very early in the morning or late in the night. Secondly, use of audio-cassettes is on the increase because they remain under the controlled conditions of the students and can be used according to their convenience. Despite these limitations, we in this country are likely to rely on the radio for quite sometime to come.

**Broadcast hours on DD, AIR**

Programmes	DD	AIR Hyderabad	AIR Shillong	AIR Bombay
BDP Programmes	26 hrs	26 hrs	17 hrs 20 mts	26 hrs
Management Programmes	26 hrs	26 hrs	17 hrs 20 mts	26 hrs
Other Diploma & Certificate programmes	26 hrs	26 hrs	34 hrs 40 mts	26 hrs
Total	78 hrs	78 hrs	69 hrs 20 mts	78 hrs

Source VC's report, IGNOU Seventh Convocation, May 11, 1996

### Television

Television has been considered to be an effective medium for spreading education. That explains why some of the universities of the world, such as Chinese, are named as TV Universities. The medium of television is extremely rich, expressive and powerful. The teacher can be seen and heard and his demonstrations and examples can be assimilated more quickly and more easily through television. Television has democratised education. The disadvantaged group of learners living in remote and rural areas of the country get the same quality of education as their counterparts in urban areas. In the UK, the open university uses TV for 35 hours a week. In China, it is used for 32 hours and in Thailand Open University and Athabasca University, Canada, it is used for 12 hours a week. In Japan it is used on a large scale. The Indira Gandhi National Open University (IGNOU) started telecasting its educational programme on national network from May 20, 1991 on Mondays, Wednesdays and Fridays from 6.30 a.m. to 7 a.m. Though TV has several advantages over print materials and Radio, it is not within the reach of common man as the sets are very expensive. Further, lack of adequate transmission facilities and dissatisfaction with the time slot available are some of the factors responsible for using the television sparingly.

### Audio-Video Cassettes

Thought of as a more effective medium than radio or television, the audio/video cassettes can be played and replayed at home by the learner at his/her will. A learner can stop a particular tape at a point

where more details are necessary and can play on slow motion to understand a difficult point. He need not get up early in the morning or wake up late in the night for Radio and TV broadcasts. "The use of video enabled a good lecturer to be seen and heard all over the country, without having to repeat his performance..." (M. Tyrell and R. Davies, 1980). At the moment, the video equipment is costly in India and even in other developing countries and they are not within the reach of most of the students. That is why audio/video cassettes produced for each course by IGNOU are kept at all study centres and regional centres. Students are advised to go to the nearest Study Centre to avail of audio/video programmes facilities when they visit study centre for counselling.

**Growth of Audio/Video Production at IGNOU**

Year	No. of Videos produced	No. of Audios produced
1992-93	396	538
1993-94	476	573
1994-95	512	605
1995-96	554	645

Source VC's Report, IGNOU Seventh Convocation, May 11, 1996

### Computer

Computer as a tool is available to improve the process of teaching and learning. Computer provides personalised education service to learners. It offers instruction to learners independently. Students of advanced nations are of the opinion that the computer is best suited for revision of the course which had already been studied. It also stores student information required for distance education management.

In developed countries computers are being used for Problem Solving, Electronic mail, Computer managed learning etc.

### Satellite

Telephone is widely used, though not in India, in student counselling by the tutors and coordinators of several open universities in the world. Unable to cope with rapid expansion in broadcasting and telephone transmission, most of the developing and advanced countries switched on to a variety of delivery methods like satellite and microwave. India joined the family of satellite nations long back and many of our transmissions are carried through the satellite now a days. Remote corners of rural areas of states like Andhra Pradesh, Bihar, Gujarat, Maharashtra, Orissa and Uttar Pradesh, are covered under Indian National Satellite (INSAT) service from

1983. UGC Educational Programmes for high school and undergraduate students are very popular. The programmes transmitted via INSAT have really created a dynamic countrywide classroom not only for students but also for teachers and educated public from 1984 onwards.

Indira Gandhi National Open University (IGNOU) started teleconferencing in 1995 in collaboration with Indian Space Research Organisation (ISRO), using Training and Development Channel (TDC) of INSAT-2B Satellite. Teleconferencing is a virtual classroom situation where student can interact with the faculty of School at New Delhi. Presently one-way video and two-way audio facility through teleconferencing is provided to 16 regional centres, 3 state open universities and 2 remote Study Centres

### **Student Response**

In order to make IGNOU's multi-media approach more useful for the target audience and to ascertain the reactions of the students of Bihar region, a questionnaire was prepared and 250 active students of BDP, BLISc, CFN and Management Programme were called upon to send their views on different components of multi-media developed by IGNOU.

The study showed that 60 per cent of students preferred video programmes as they brought the students face to face with well known professionals of the country and brought the inaccessible places within their location reach. 30 per cent students give their choice for print materials and 10 per cent for audio programmes. 80 per cent students got information about IGNOU's telecast through Doordarshan and newspapers/magazine, whereas 20 per cent got the information from their respective study centres. 90 per cent students who had seen the IGNOU telecast of Doordarshan are desirous to view them again, 10 per cent of them wanted to concentrate more on print materials. 80 per cent students preferred to see the programme at home and 20 per cent liked to see the programme at their respective study centres.

The survey revealed that 90 per cent of the target audience preferred the present telecast timing of IGNOU programmes on Doordarshan and 10 per cent however suggested that the programme should be telecast at night. Almost all the students desired that some more time should be given to IGNOU's programme on the Doordarshan.

### **Conclusion**

On the basis of the above discussion, there emerges no straight answer as to which medium is

most effective; each serves different functions. There should be a mix and blend of media so that a student gets the maximum benefit.

In the conventional system, lecture and print materials dominate, whereas in the case of open universities, different technologies need to be used to provide access to knowledge and skill. Depending upon the availability and circumstances, a media mix has to be evolved. What is good for one country is not necessarily good for another. In using technology, we must know that "there is no super medium" (Bates, 1982). The use of different kinds of media depends on the purpose of education, the function of the medium and the different media available. It is believed that educators have been slow, in using technology in education. Only distance education systems have been influenced by modern technology.

While using certain media, it should be taken in consideration that teachers have the necessary training relevant to the use of the chosen media. Unless there are properly trained teachers, it may not be easy to use certain media for education. Not only that even for counselling work, teachers need to be trained in distance education. Training, therefore, has to be taken up on a large scale if distance education is to be effective.

Further, the above study revealed that IGNOU multimedia approach appeals to the students at large. Video programmes bring the students face to face with the well known professionals of the country. The study centres of IGNOU must play an active role for disseminating information regarding audio/video sessions to be held at the study centres and on national network of Doordarshan. Although audio/video programmes and print materials are developed for IGNOU students, the students and teachers of different educational institutions and universities have generally accepted their utility and are all praises for them. It is, therefore, suggested that audio/video/print materials should be made available at the IGNOU study centre/regional centre for sale and video programmes may be extended to Cable TV network.

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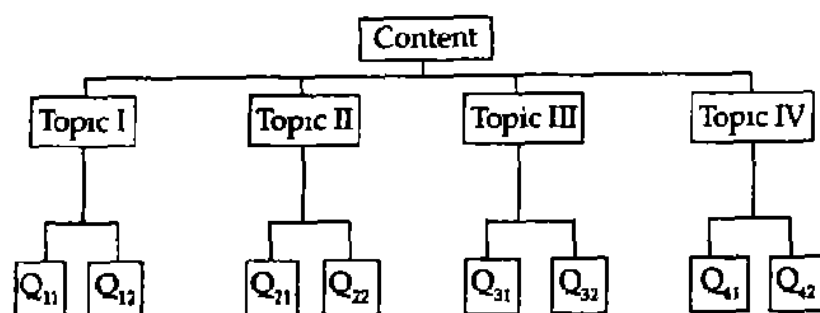
# The Pivotal Issue in the Examination System

Sunil Job K.A.\*

In the present examination system there are a number of loopholes that tarnish the credibility of its purpose. One of the dominant factors which blocks the valid estimation in the testing programmes of higher education system is its faulty scheme of options. It has created among the scholars a tendency of blind omission of different areas of study with a greater degree of confidence.

An achievement test or exam is a tool in appraising the relative accomplishment of an individual in any field of study. An internal flexibility by an odd choice of options often hampers the genuineness of the intended purpose. An achievement test or exam at the college level loses its content validity by providing faulty scheme of options which hinders the comprehensive assessment of the content. For instance, a testing package in mathematics with 50% option a candidate can even score cent per cent marks by the omission of 50% of the total content under consideration in evaluation. It does not mean that a test construction should opt a rigid approach in the test construction. Provision for option in a test or exam is a must in a democratic environment but it should be administered without affecting the content validity. To achieve this it is ideal for a test constructor to provide option within the topic of the content and to avoid inter topic option from the content area.

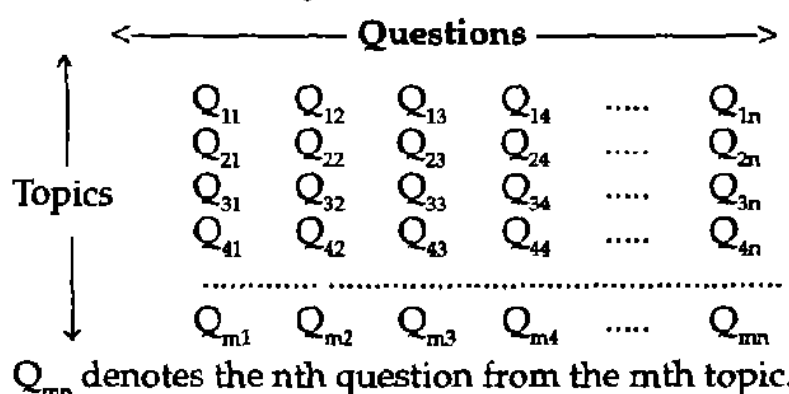
The pattern of the options is illustrated as follows :



In the above layout the options could be made as (1)  $Q_{11}$  or  $Q_{12}$  (2)  $Q_{21}$  or  $Q_{22}$  (3)  $Q_{31}$  or  $Q_{32}$  (4)  $Q_{41}$  or  $Q_{42}$ .

In general the choice of options could be given as —

Select  $r$  questions from each section (topic) given under



Here the entire content is divided into " $m$ " subunits and " $n$ " questions are formulated from each topic and the candidate is asked to make " $r$ " options within " $m$ " subunits.

It will be advisable for a better validity measure to ensure equivalence in objectives and difficulty level for every question in each block of topic.

The content validity is the soul of the achievement test which could be strengthened by eliminating the inter-topic selection and thereby promoting options within the topic. Test construction should move in this direction to achieve excellence in evaluation.

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# "Refresher Course", An Opportunity for Improvement in Academics of Teachers

K.G. Joshi\*  
G.V. Patil\*\*

Refresher courses are proving to be a boon in improvement of scholarship of college teachers. In India 229 universities and about 9000 colleges/institutes imparting higher education are located all over the country and employ about 3,50,000 teacher educators belonging to educational and co-curricular areas.

A university is both a centre of culture and academic excellence. The objectives of a university are creation, dissemination and extension of knowledge, inculcation of scientific temper, induction of moral ideas and promotion of social harmony. A university must develop a system of intimate interaction with society to meet social and economic needs

Teachers in higher education are required to play a role in the socio-economic development of the country. Professional development of teachers is for improving their knowledge, awareness and motivation for performing their functions more competently. It is necessary and important to undergo some course at the beginning of their professional career. This would enable them to have orientation about their profession and issues like socio-economic context of higher education, teaching methodologies, teachers' functions, and their professional and career development. Apart from orientation courses teachers need to undertake refresher courses from time to time in view of the rapid explosion of knowledge and the need to keep pace with it. Being subject specific refresher courses attract many teachers. As such university department is a suitable venue for conducting refresher courses for college teachers. Normally 30 members are selected for a refresher course.

Refresher courses have been a precondition for promotion of college teachers. Such courses have been organized by different universities as per U.G.C. guidelines. Some subjects are however so specialized, that the number of teachers is so small that it cannot meet the required strength to run the course. The courses are run during academic session.

A refresher course was conducted at Dr. Babasaheb Ambedkar Marathwada University,

Aurangabad (Dr. BAMU) during 16th Dec. 1996 to 11th Jan. 1997 in Environmental Science. 30 teachers participated in the course. Out of the 46 participants called for the refresher course, 35 were male and 11 female; thus there was 24 per cent representation of ladies. Participants from minority communities were 39 per cent. In all 63 per cent of the participants were from the colleges/institutions affiliated to Dr. BAMU, Aurangabad. Participants from Pune, Shivaji and North Maharashtra universities' colleges were 15.19, 10.85 and 4.84 per cent respectively. 41.30 per cent participants were local while 58.69 per cent were from other parts of Maharashtra. Out of the total participants 65.10 per cent were Ph.D. holders. An interesting thing observed was that a father and his daughter got admission to the same course.

Resource persons were both from within as well as outside Maharashtra. 33.33 per cent resource persons were from out of Marathwada region. Majority of the resource persons belonged to subjects related with environmental science (99.36 per cent) while 4 lecturers out of a total of 144 were not at all related with the environment science (0.64 per cent). Saturdays showed decline in the attendance. First Saturday had 47.82 per cent attendance, while second Saturday showed only 43.40 per cent of attendance.

Table 1. Details about the Participants Attending the Refresher Course

Total Participants (46)	Actual Nos	Percentage
A) Participants called for .		
1 Male	35	75.95
2 Female	11	23.87
3 Open Category	29	62.93
4 SC/ST (Reserved)	12	26.04
5 Minority	05	10.85
6 Ph.D.	30	65.10
7 M.Phil	04	08.68
8 Dr. B.A.M.U.	29	62.93
9 Poona Univ.	07	15.19
10 Shivaji Univ.	05	10.85
11 Amravati Univ.	01	02.17
12 North Maharashtra Univ.	04	04.68
13 Lecturer in Jr. Scale	01	04.68
14 Lecturer in Sr. Scale	22	47.74
15 Lecturer in Selection Grade	24	43.40
16 From local colleges	19	41.30
17 From outside city	27	58.69

\*Reader in Botany, \*\*Director, Institute of Science, Caves Road, Aurangabad-431 004 (M.S.).



Table 2. Information about Resource Persons

	Actual No	Percentage
1. Total resource persons invited	40	—
2. Outside Dr. B.A.M.U	16	33.33
3. From Dr. B.A.M.U Depts	13	27.04
4. From Aurangabad city	19	39.52
5. Lectures delivered	144	—
6. a. Related with Environmental Science	140	99.36
b. Not related with Environmental Science	04	02.76

- A Dr. B.A.M.U.
- B PUNE UNIVERSITY
- C SHIVAJI UNIVERSITY
- D AMRAVATI UNIVERSITY
- E NORTH MAHARASHTRA UNIVERSITY
- F MALE PARTICIPANTS
- G FEMALE PARTICIPANTS
- H OPEN CATEGORY
- I RESERVE CATEGORY

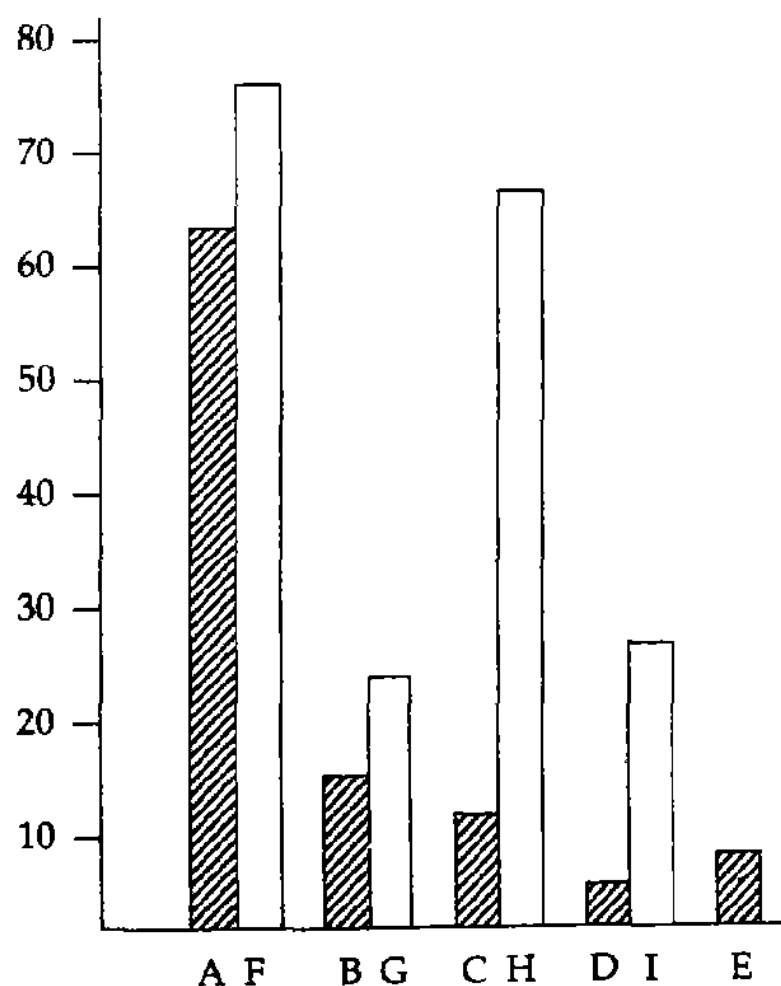


Figure 1 Histogram Showing per cent Participant and Category

## A Coming Student Revolution?

(Contd. from page 1)

have to pay anything significant for their studies, although the amounts will be well below what American students in public universities pay. Student organizations in Britain have strongly opposed the imposition of fees and there have been a few demonstrations, but no substantive unrest has occurred yet.

The student activism of the 1960s was stimulated at first by campus issues — in the United States and in Europe. Students reacted to what Europeans call the "massification" of higher education. In the U.S., a slogan was "do not fold, spindle, or mutilate" — a take-off on the computer punchcards of the time. This was a plea not to be treated as mere statistics in an academic system growing rapidly. European students also reacted to dramatic expansion and deteriorating conditions on campus. It is not a coincidence that the French student revolt, which came close to toppling the government of Charles deGaulle, started on the campus at Nanterre, a particularly dreary and overcrowded new branch of the University of Paris.

Campus conditions are significantly deteriorating in Europe as a result of government policy rather than because of severe economic crisis or errors on the part of university administrators. Exactly as in the 1960s, expansion is not combined with increased funding. Morale throughout academe is low, and it is the students who are increasingly discontent. Student anger has boiled over in Germany. It is at least possible that other countries will follow.

Student opinion and attitudes should not be overlooked. This long period of campus quiet has lulled policymakers into discounting students as a potential political and social force. Students are directly affected by government policy concerning higher education — they must pay the tuition fees now being imposed in Britain, and must study in overcrowded lecture halls and deal with inadequate libraries and laboratories in much of Europe. Students have so far accepted their fate. Now, there is some evidence that student patience is running out.

Policymakers and administrators ignore student views at their peril. Once mobilized, students can be a powerful force. The 1960s taught us that the student political activism is difficult to predict and that it rises from unanticipated causes. Whether the recent German demonstrations are a precursor to wider unrest is as yet unknown. What we do know is that campus conditions in Germany are not all that different from other countries in Europe, and have some parallels to the fiscal woes affecting some public university systems in the United States.



# INDIAN INSTITUTE OF FOREST MANAGEMENT

Bhopal, Phone-575998, Fax : 0755-572878, E. MAIL NO. iifmmail@iifmb.res.nic.in

## SPECIAL RECRUITMENT DRIVE FOR SCHEDULED CASTE AND SCHEDULED TRIBE CANDIDATES (SECOND ATTEMPT)

ADVT. NO. IIFM/AMT/PSC-12/97

Indian Institute of Forest Management (IIFM) is a National Institute of autonomous character financed by Ministry of Environment & Forests, Govt. of India, to cater the training, education, research and consultation needs of the forestry and allied sectors in India. The Institute requires outstanding persons for appointment to the faculty with published works of high standards and an inclination towards orientation of their expertise in forest management. Institute also invites applications for filling up non-faculty positions of Research Associates with good academic records.

### Faculty Position-No. of posts (3) Category SC-2, ST-1

Associate Professors/Assistant Professors in the areas of (1) Marketing Management (Discipline : Marketing Management), (2) Financial Management Accounting & Control (Discipline : Financial Management/Accounting), (3) Applied Computer Technology (Discipline : Operation Research/Data Base Systems (MIS)/Simulation modelling)

**Associate Professor : Rs. 4500-150-5700-200-6300 (to be revised)**

**Age :** Below 50 yrs.

Ph D , with first class or equivalent (in terms of Grades etc ) at the preceding degree in the appropriate branch, with a very good academic record throughout and a minimum of 8 years' teaching/research/forestry/industrial experience of which atleast 3 years should be at the level of Assistant Professor

**Assistant Professor : Rs. 3700-125-4950-150-5700 (to be revised)**

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### Research Associates-No. of posts (2) Category SC-1 ST-1

**Pay Scale : Rs 8000-13500 (Revised)**

**Age :** Below 40 years

1 Research Associate, Financial Management Accounting & Control (Discipline : Financial Management/Accounting).

**Qualifications & Experience :** M.Com with First Class with 3 years research/work experience. Weightage will be given to candidates with doctoral degree.

2 Applied Computer Technology and Quantitative Techniques (Discipline : MIS/RDBMS).

**Qualifications and Experience :** First class degree in M.Tech. Environmental Engineering/M.Sc. Environmental Science with 3 years experience in Environmental Impact Assessment, environmental modelling and computer software use in EIA. Weightage will be given to candidates having exposure to internet/programming internet server and VSAT.

**Note :** 1. The Institute reserves the right to shortlist the candidates in any rank and the category (SC/ST) based on the applications received for various posts. 2. Number of vacancy advertised may increase or decrease as per our future requirement

**GENERAL :** 1. Besides the pay & DA the employees would be entitled to other facilities as per Central Government norms/as per the rules framed for this purpose by the Institute from time to time. 2. Candidates should be below maximum age as on 31.3.98. 3. Persons working in Govt./autonomous organization/Public Sector undertakings should apply through proper channel. However, advance copy may be sent to the Institute. 4. Application giving details in block letters viz., (a) Post applied for, (b) Name, (c) Postal address (Permanent & Present), (d) Date of Birth, (e) Age, (f) Whether SC/ST, (g) Educational qualification indicating clearly examinations passed, year, university, subjects, marks obtained, (h) Details of previous employment in chronological order specifying designation and pay, Institution/organisation, period of service, (i) Details of publications, (j) Signature of the applicant and a recent passport size photograph, should be sent by REGISTERED POST so as to reach the **DIRECTOR, INDIAN INSTITUTE OF FOREST MANAGEMENT, NEHRU NAGAR, BHOPAL—462 003** latest by 31.3.98. 5. Diploma in Forestry from Indian Forest College (now Indira Gandhi National Forest Academy, Dehradun) will be treated equivalent to Post-Graduate Degree in Forestry. 6. Minimum requirement of qualifications and of experience will not be relaxed in any case. Persons who do not possess the minimum qualifications need not apply. 7. Institute has the right to fill/not to fill up the above posts. Only suitable candidates will be called for test/interview. 8. Only attested copies of certificates and proof of publications etc. be sent.

**DIRECTOR**

# Genes, Health and Economics

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**Prof. V. Ramalingaswami, National Research Professor, All India Institute of Medical Sciences, New Delhi, delivered the convocation address at the Second Annual Convocation of the NTR University of Health Sciences, Vijayawada (Andhra Pradesh). He said, "Increasingly in the future, doctors will have to face a double challenge — the challenge of coping with the increasing infusion of technology into medical practice and the necessity to become much more aware of the organisational, political and managerial contexts in which medicine will be practised in the future. The future challenge of medicine will put a premium on collaboration between the health sector and non-health sectors of human development such as education, information, management and environmental issues. In fact, management has now become a new social function." Excerpts**

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## The University of Health Sciences

The establishment of Health Sciences University in the state of Andhra Pradesh bringing together all the existing medical colleges in the state under one rubric constitutes a pioneering step in medical education in the state. It facilitates the development and pursuit of uniform standards of medical education in all the learning institutions in medical sciences in the state. It could be a stepping-stone to the introduction of higher and higher standards of education. The University should be concerned with standards rather than standardization of the curricula. Each medical college of the University should have freedom to experiment with education technology, content and settings of medical learning in a constant striving for high standards relevant to the situation on the ground. There are two forces that are now driving the process of medical education — one is the impact of biomedical and health technologies on the training of a doctor and the necessity of that training to be related to community needs. In the latter case the spirit is one of a university without walls and an educa-

tion that is based on the needs as perceived by the community. This is the challenge facing a university of health sciences. I am delighted that this university is called a University of Health Sciences, a concept which breaks down the artificial barriers between medicine and health, between cure, prevention of disease and promotion of health. There is a continuity in these facets of medical training although the settings in which each of these components are provided will vary as will the tools and methods that are used.

At the time when the concept of a medical university was being broached in India, there were concerns that medical education might get far removed from the faculties of Humanities, Social Sciences and Fundamental Biology of a university. Lack of interaction with these disciplines could be detrimental to training of a physician. Nevertheless, the logistic advantages of bringing all medical education institutions together under one roof can be quite considerable and special steps may be taken to sponsor collaboration between the Health University and other universities in general. Increasingly in the future, doctors

will have to face a double challenge — the challenge of coping with the increasing infusion of technology into medical practice and the necessity to become much more aware of the organisational, political and managerial contexts in which medicine will be practised in the future. The future challenge of medicine will put a premium on collaboration between the health sector and non-health sectors of human development such as education, information, management and environmental issues. In fact, management has now become a new social function.

Today I wish to share with you some of the excitement that surrounds DNA, Genes and Molecular Medicine as we prepare to enter the 21st Century. I wish to deal with some of the profound benefits that Molecular Medicine will confer on the future health of man and also equally the ethical, social and regulatory responsibilities that go side by side with progress in this area.

The story starts with discovery of the structure of DNA by Watson and Crick. No single discovery had had a greater impact on humankind during the 40 years since its discovery of Recombinant DNA technology. With this, mankind has stepped from the slow Darwinian Natural Evolution to the uncertain future of rapid Artificial Evolution. The crowning event is the Human Genome Project, currently going on, a project to map at high resolution the entire set of Genetic Blueprint of the human race, all the 100,000 genes in the human genome. Progress continues at a relentless pace.

The Human Genome Project will revolutionize our basic understanding of disease and our ability to prevent, treat, cure and predict human disease. The human

genome has an estimated 3.5 billion base pairs of DNA and the project aims to map and clone all of this DNA. This grand vision, once considered foolish to embark upon, is now becoming a reality and will probably be completed ahead of time in a few years. Under its impact Medicine, will change rapidly. A wide variety of important genes responsible for hereditary diseases, such as Muscular Dystrophy, Cystic Fibrosis, Retinoblastoma, Neuro-fibromatosis and familial colonic and breast cancers and scores of others have been identified and cloned over the last few years.

Now, genetics is entering the arena of complex polygenic traits, beyond the 4000 odd single gene disorders that follow mendelian laws. A whole host of human diseases which commonly affect man such as hypertension, coronary artery disease, diabetes, most adult cancers and serious mental disorders such as manic depressive psychosis, schizophrenia and alcoholism all have a genetic component and genes that predispose people to these diseases are being searched for in the human genome aggressively. The field of behavioural and psychiatric genetics is now with us as an emerging field of science. An important discovery is the existence of a gene on the upper arm of chromosome 6 that may play a part in some cases of schizophrenia.

### Gene Therapy

The vista of gene therapy has now been opened to human exploitation and has attracted widespread interest, even euphoria. Is it all hype, is there a hope? Gene therapy consists essentially of the introduction of a gene sequence into a cell so that it can modify the behaviour of the cell in a clinically relevant fashion. It is an enabling technology which can be exploited in several ways (i) to treat a genetic mutation

and normalize the affected gene function, (ii) to kill a cancerous cell by the use of a "suicide gene" or (iii) to modify susceptibility to Risk factors, for example, for coronary artery disease, diabetes, hypertension.

It is now generally agreed in legal, scientific and social circles that somatic gene therapy poses no special or new ethical problems. Safety issues of course need careful review. Gene therapy needs to be brought into the normal system of licensing of medicines under the Drugs Controller of India. Ethics committees will be needed governing the introduction of new clinical products including gene products. Gene delivery to somatic cells to treat a disease and reverse the disease process is in the community interest and gene therapy should take place along with other forms of therapy in the treatment of a given condition. It may in fact prove to be safer than some of the pharmacological approaches.

Whereas gene therapy has received the most publicity, the new DNA knowledge enables Medicine to enlarge its range of service in improving diagnosis, in modifications designed to lessen the risk of disease and in prevention through the use of DNA vaccines and new molecules. Since 1993, there is an explosion of interest in Naked DNA vaccines. A plasmid containing a gene for an antigen can be inserted into muscle cells which will induce long-term immune responses. With this technique, mice have been protected against TB, chimpanzees against Hepatitis B, Vaccines against influenza A and HIV have entered phase I clinical trials. DNA vaccines may herald a breakthrough in vaccinology. The new techniques of human molecular genetics can be helpful to maximize the quality of health of all by providing options for best health care to the community utilising genetic

information and technologies as a part of a general health care strategy.

### Genes for Health

Genes for health should be considered a new strategy in the health care of individuals and populations. The basis of the new genetics is that it is not only single gene mutation that affects health but also the interactions between multiple genes and the environment that give rise to complex phenotypes associated with health and disease. It is clear that we are not prisoners of unalterable destiny through our genes. Environmental influences, lifestyles, diet and nutrition can modify genetic destiny positively.

Much of the gene technology is today subject to patent protection and many genes have been patented. This is bound to raise problems of equitable access to therapy of all sections of the population irrespective of their ability to pay. How can we use genetic information for optimizing health care and make rational choices to maximize quality of life? Who owns the human genome?

### Genetics in India

I would like to say that India has considerable strengths today in Molecular Biology and genetic Technologies. These scientists are eager to work side by side with our clinical scientists to address the numerous problems that I mentioned briefly so far. We must establish linkages. There is a large 'Gene Pool' in the Indian population. The Department of Bio-technology of the Government of India has taken an initiative to use the information on the human genome for diagnosis, prevention and therapy of genetic disorders. It aims to identify, map and characterize new genes related to genetic disorders prevalent in India. A network of genetics clinics attached to medical college

hospitals in different parts of the country is being established. A computerized database for genetic disorders in the Indian population will come into existence. Training programme in genome analysis are proposed. Special emphasis will be placed on genetic disorders that are common in India. Already, considerable effort is being made to develop DNA Diagnostic kits for the diagnosis of emerging infectious diseases. Steps are being taken to develop expertise and infrastructure for gene targeting and gene therapy. An Advisory Committee is working to formulate guidelines for the regulation of ethical, legal and social issues involved in the human use of gene technologies.

### **Medical Ethics in Medical Colleges in India**

As far as I understand, medical ethics is not taught as a separate subject in our medical colleges except in a few institutions. There is no systematic application of the culture and philosophy of India to the problems posed by medical ethics. Every medical school in the United States now teaches medical ethics as part of its curriculum. One of the goals is to ensure that graduating physicians will be able to apply the highest ethical standards in their practice of Medicine. At the present time, insufficient attention is being given to specific topics with ethical overtones such as patient autonomy, confidentiality, end of life decision making and the ethics of medical and health research. The latest medical advance bristling with ethical and moral issues is the cloning of a sheep, dolly, who is now one year and four months old and is believed to be expecting an offspring. This is the first mammal to have been successfully cloned from the cells of an adult animal (cloning means the production of an exact

replica genetically identical to another). Public anxiety is heightened by this technological development. There are fears that if this technology is allowed to be extended to humans, it will be a gross interference with the natural order and natural schema and contravenes human dignity. Now on the heels of dolly comes the biophysicist of Chicago, Dr. Richard Seed who is threatening to clone human beings for the ostensible purpose that such research would help infertile couples to have babies. But this is only a smoke screen for there already exists a number of ethically acceptable ways of helping infertile couples to have babies.

People are entitled to ask. Why should Nature's familiar patterns be disrupted?

India needs a set up which relies on laws and regulations and on professional codes of conduct in our universities and medical colleges in order to steer genetic advances for the benefit of mankind. Courses are needed in bioethics throughout our universities and our medical and research institutions. Bioethics should reorient the culture and philosophy of our scientific and health pursuits, of our decision making bodies and of the public. Health risks of the new technologies are important but the moral dimension of these new technologies should receive greater emphasis.

Commercial exploitation of genetic testing and its use in discriminatory practices in employment and in society are ethical issues of vast dimensions which should be addressed through proper regulatory mechanisms. Reliability, quality control, counselling services and the right to confidentiality are essential elements of regulation. There are also profound ethical concerns on the issue of prenatal genetic testing

and the decision to abort female fetuses. Genetic screening, if used responsibly, could benefit the cause of human health.

I have mentioned earlier the need for courses in medical ethics in our medical colleges and related professional educational and research institutions. It is of the utmost importance that doctors, other health care professionals and the public must be educated accurately and without sensation about how the new developments in Molecular Medicine are permeating the whole spectrum of health care activity. It often happens that families of those affected by genetic disorders, if they are educated enough, know much more about these disorders than do their doctors. This lack of awareness among doctors means that they cannot give their patients accurate and reliable information on genetic transmission of disease and traits from one generation to another. Commercial enterprises developing diagnostic and screening tests have set out to capitalize on the new knowledge of genetics and it is in the interest of the public that the medical profession should be in constant touch with developments in this area. There is an urgent need to improve the training of medical students in genetics related diseases. Doctors must be able to cope with the new DNA revolution and its impact on medicine and health. Doctors of the 21st century must guard against indiscriminate use of technologies and preserve the sanctity of human life and dignity. The challenge is to see that these technological possibilities of the 21st century are put to use in a most humane and equitable way and how cost effective and comprehensive care can be provided in a spirit of protecting the consumer against incompetent, unwarranted and unethical caring services.



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## CAMPUS NEWS

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### International Conference on Collaborative and Networked Learning

Prof. Gajaraj Dhanarajan, President of the Commonwealth of Learning (COL), Canada, stressed the need to change the nature and structure of teaching institutions. He also stated that there was a threat to the century old system of education, mainly because "the system is now obsolete". He was delivering the inaugural address at the three-day conference on Collaborative and Networked Learning" organised by the Indira Gandhi National Open University (IGNOU) in New Delhi recently. He advocated the use of technology that propounded networked learning.

Stating that fundamental changes would be required, Prof. Dhanarajan said that these would challenge institutions that provided educational service.

The first challenge was the re-orientation of our teachers and the pedagogy they applied to their vocation, he said. The fraternity still had to come to terms with a new type of learner and a learning environment that encouraged the student to be independent. "Their traditions of teaching and views of learning have resulted in organisational structures that are almost completely centred on faculty", he stated.

Prof. Dhanarajan said another challenge was overcoming the perceptions and the fear of faculty to the changing nature of their roles and values as well as the rewards in the new learning environment. "There is real,

though unfounded, fear on the part of the faculty about losing total control of the teaching and learning environment", he added.

He exhorted academicians to remove the time-driven element from today's schools, colleges and universities. These were ruled by time, prescribing when, in his/her life, a student could or was ready to learn and the length of time required for learning. He, however, hoped that learners would have access to technology "though as we near the end of the century, some 500 million people may not have made their first telephone call, let alone used the Internet".

Speaking at the conference, Ms Janet Jenkins of United Kingdom pointed out that multi-national projects would dominate the educational scene in coming times, with countries clubbing together for distance education and for international acceptance of their respective degrees. She said that 11 countries in eastern and central Europe had joined together for the purpose of providing distance education.

Prof. Yash Pal, former Chairman, UGC, in his address elaborated on how collaborative learning was just the means and not the end in networking "intimacies" that characterise social entities.

The 115 papers (63 from abroad) and the keynote addresses at the three concurrent sessions covered the eight sub-themes of

collaborative and network learning.

The first sub-theme put forth models of co-operative learning and dealt with pedagogical issues from the learner's perspective. On campus, off campus Peer Tutoring Electronic Network (OPTEN), a model for distant peer tutoring using computer mediated communications (CMC) was analysed as a teaching strategy. The issues involved in co-operative learning like learner autonomy, connectivity, and interactivity and its effect on students along with IGNOU's role as a distance learning facilitator was critically over-viewed. The need to overhaul the evaluation process in Distance Open Learning (DOL) was urgently felt.

The second sub-theme studied distance education as virtual institutions through models of networking among institutions. The discussion revolved around networking, collaboration and interaction needed amongst distance and open education providers and learners specially in the areas of professional courses through electronically networked study centres, inter-networking communities and multimedia teleseminaring.

Designing a virtual learning environment in creating IGNOUNET—a network for distance education through application of communication technologies, was also discussed.

The next item on the agenda was the study of behavioral and cultural issues involved in collaborative and network learning. Effective use of computers, profession-



alism in distance education along with reengineering the management of distance education learning and empowering the majority, who are denied higher education through network based educational programmes were felt to be the pressing needs.

The next topic talked of sharing organisational resources through partnership programmes between developed and developing countries and other student support services. It also scrutinised the issues of jurisdiction, authorship, work ethics and basis and politics of these partnerships, along with case studies of university-university and university-industry collaboration.

Issues like secondary teacher education programme for quality assurance, networking possibilities for teaching physics practical to undergraduate students and editorial intervention in text preparation were also examined.

Development of teaching technologies through programmed instruction, satellite based interactive learning system, multimedia education and training of Panchayat functionaries comprised the last broad arena of discussion. Use of Open Education Network and Instructional Media in animal husbandary and agriculture education was also discussed.

35 participants from 10 countries took part in the deliberations.

### **Improving Legal Education**

The need for an all-India council to introduce reforms in legal education was stressed by Dr. N.R. Madhava Menon, Member, Law Commission of India in Chennai recently.

Participating in a lecture-dis-

cussion organised jointly by the Department of Legal Studies, University of Madras and the Forum for Just Law, Dr. Menon said lawyers had miserably failed to improve the quality of legal education. It was time that the management of law and reforms was given to an independent professional body on the lines of the AICTE, which governed technical education in the country.

He said there was a conspiracy to keep the standards of legal education low and those in the legal profession also failed to give legal education the attention it deserved. Hence the need to entrust the responsibility to a new body.

He said "we have diluted enough. For the future of the country, economy, rights of our citizens, the quality of legal education has to be improved. We should overcome our callousness, indifference and there must be a multi-disciplinary approach to improve the quality"

He regretted that the five-year integrated law course, intended to improve all round skills and provide quality education, had been buried deep by the universities. "In the name of legal education, we are perpetrating a fraud on education itself", he said.

The concept of social justice would be meaningless if quality legal education was not provided.

He suggested that only those who were really interested in taking up law as a profession should be admitted to law colleges and efforts must be made to improve the all round skills of students. In this context, he cited the example of the National Law School, Bangalore, which had become a model institution for imparting law.

He said there were 433 law colleges in the country with 2.5 lakh students on the rolls but the quality of legal education could not be com-

pared with other countries. Next to the U.S., which had a million lawyers, India had about 4.66 lakh lawyers. In the next five years, multinationals operating in India alone would require about 20,000 law graduates.

From 2005, under the GATT agreement, foreign lawyers could practise in India and the present quality of legal education may make the litigants go after foreign law firms.

### **IIT Madras-EPFL Tie-Up**

The IIT-Madras and the Swiss Federal Institute of Technology at Lusanne (EPFL), Switzerland recently signed an agreement for co-operating in areas of common interest in academic research and teaching.

The two institutions hope to exchange faculty, students, technical publications and information, besides providing both sides an exposure to mutual strengths and industrial cultures, in the long run. By developing collaborative projects, the institutions could hope to get funding from the European Union and other organisations.

Prof. R. Natarajan, Director, IIT-Madras, and Prof. Dominique de Werra, Vice President, EPFL, signed a Letter of Understanding.

The six-member Swiss delegation which went round a few institutes of higher learning in India, had identified some of the current specific areas of common interest such as communication systems, micro-engineering, computer science, mathematics, physics and biomedical engineering.

"We hope this exploratory visit would pave the way for future collaboration in diverse disciplines between EPFL and various Indian technology/research institutes, in-

cluding student and faculty exchange programmes" Prof. de Werra said.

At a time of globalisation of even higher and technical education "we are looking at developing global engineers for the next century — those who understand the problems and cultures of a range of countries," the EPFL Vice President said, pointing out that already the Institute had on-going exchange programmes with institutes in South America, North Africa and China.

The Swiss delegation had visited the IIT, Kanpur and Delhi, Indian Institute of Science, Bangalore and the Tata Institute of Fundamental Research, Mumbai, mainly exploring means of strengthening mutual contacts among the institutes, through cooperation in areas of common interest and to promote research programmes. At IIT-Madras, the delegation visited several laboratories and met faculty members and students.

Founded in 1853, the EPFL offered degree, PG and doctoral programmes in engineering, especially leading-edge technologies, and industrial/applied research; coordinated with several European institutions of higher education and had signed over 100 bilateral agreements with institutions worldwide.

Dr. Natarajan pointed out that the Swiss Institute was part of a cluster of a dozen leading engineering schools in the European Union.

It had several similarities if not identical projects, with the IIT-Madras. A centre for Science and Technology Support served as a window in the EPFL to coordinate sponsored research and provide an interface with industrial organisations, especially through continuing education sessions for them.

Dr. Natarajan said student fellowships in Switzerland could begin by July, and specific projects identified in the next two months, to serve not only as institutional cooperation but even on a national scale.

### **Workshop on Teacher Education**

A national workshop on competency-based and commitment oriented Teacher Education was recently held at the Gujarat Vidyapith's Institute of Advanced Studies in Education (LASE) in collaboration with the Gujarat State Council for Education Research and Training (SCERT). It was organised by the National Council for Teacher Education (NCTE) as a major programme of curriculum reform in teacher education in the context of the challenges to be faced by school education in the 21st century. This included curriculum renewal of pre-service teacher education at the elementary stage; strengthening of recurrent and inservice teacher orientation by SCERTs, DIETs, and other agencies; self-directed professional learning by teachers; strengthening the competence, commitment and effectiveness of teacher educators, etc. A comprehensive paradigm for multi-dimensioned teacher education programme developed by NCTE through a series of studies was discussed in order to initiate implementation work in different states to eventually result in improved teacher performance in the classroom, school and community; and contribute to the improvement of quality, equity and efficiency of school education.

Prof. R.H. Dave, former Director of Unesco Institute of Education conducted the workshop while Prof. J.S. Rajput, Chairman, NCTE guided the deliberations.

Prof. Rajput, Chairman of the NCTE introduced the theme. Prof. Ramlal Parikh, Chancellor of the Gujarat Vidyapith in his inaugural address stated that in view of the exponential & quantitative growth of knowledge, the students were over-loaded with information most of which was not necessary. It is therefore important to develop minimum competencies in each subject.

### **Madras Varsity Convocation**

The country needs to evolve a technology policy that can help strategic funding of research in sectors such as national security, food, health and energy security, said the former U.N. Under Secretary General, Dr. Arcot Rama-chandran. He was delivering the 140th convocation address of Madras University in Chennai recently. He said economic growth of industrialised nations had been primarily due to the use of capital with technology—both of which complemented and reinforced each other. Pro-economic growth must be pro-investment, pro-technology and pro-education. Thus, the best technology policy was also the best economic policy, he said. The former should suit the country's social, political and environmental realities, he added.

It should support basic research in natural and biological sciences, and S and T development that promoted natural resources, conservation and environmental quality; provide incentives for technology upgradation in small and medium firms where innovation normally occurred for promoting productivity, quality and reliability; facilitate joint research by industry, national laboratories and universities for sustainable development; give strong support for education at all levels to avoid obsolescence and a tax structure that favoured savings

and investments in physical, human and technological capital, while ensuring a stable low inflation economic policy. It should allow institutional funding in the infrastructure sector and improve governance through transparency and participatory processes.

The world now faced a fourth revolution of making development sustainable. The key words were reduce, reuse and recycle, most exemplified in three sectors — energy and transportation; water and waste management.

He asked the graduands to prepare for "the challenges of sustainable development, promoting economic growth, social equity and ecological viability". The starting place was the universities, whose education should be oriented towards the future. Highlighting the inadequacies in higher education, he said instead of focusing on individual performance in course work and thesis, it should project teamwork.

Dr. Ramachandran regretted that there was no institution attached to a University, for training and research in intellectual property law whose importance had increased over the last few years.

Pointing to the concern over decreasing investments in higher education, and reports that it should be left to private funding and market forces, he said academicians should focus on the fallout of such a policy on national welfare.

Education and research should emphasise "flexibility and choice", increase focus on networking for research, on productivity/quality/reliability/environment/recycling, on patentable products and on professionalism, Dr. Ramachandran said.

The Governor and Chancellor, Ms. M. Fathima Beevi, gave away

the degrees/diplomas, besides prizes and medals to 482 men and women who had completed U.G., P.G., M.Phil., Ph.D. and D.Sc.

The Vice-Chancellor, Prof. P.T. Manoharan, said besides the 482 candidates, over 71,000 candidates were conferred the degrees in absentia, including 39,000 women candidates. Giving an overview of the university departments, funding, projects and resources, Prof. Manoharan said "doing more with less" seemed to be inevitable in the IX Plan, as society's demands were increasing. He said the credit-based semester system would be operated from 1998-99 academic year at the University level in a reformed manner. He said vocationalisation, credit system and School (pooling of departments) system would bring in system adjustment and change in the University. A common academic calendar for all the affiliated colleges would be made compulsory from next year.

### **GNDU to Sign MoU with Pak Varsities**

In pursuance of the spirit of the SAARC agenda for the promotion of education, Guru Nanak Dev University will sign memoranda of understanding (MoU) with two universities of Pakistan — Islamabad University and Punjab University, Lahore — for exchange of teachers and students for

interaction.

Dr. H.S. Soch, Vice Chancellor, Guru Nanak Dev University, who had just returned from Pakistan along with a delegation of the World Punjabi Organisation, said that Prof. Siddiqui, Vice-Chancellor of Islamabad University and Prof. Khalid Hamid Shah, Vice-Chancellor of Punjab University and Governor of West Punjab had agreed to exchange students and teachers for interaction and better understanding.

A good number of books and manuscripts on Hinduism and Sikhism in Gurmukhi and Devanagari scripts were lying stacked in the library of Punjab University at Lahore. Dr. Soch told Professor Shah that since the university was the "mother university" and all other universities in east and west Punjab were its offshoots, the university should share this valuable literature with other universities and allow those in Indian Punjab to get microfilms of this literature.

The Vice-Chancellor not only agreed to this but also suggested that a lot of literature in Sanskrit in the library of that university could also be similarly shared. All three Vice-Chancellors will soon write to their respective governments to seek permission to sign the memoranda of understanding.

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## ***News from Agricultural Universities***

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### **TNAU Project on Agri Simulation**

A research project "Applications of systems simulation in agriculture," to simulate agricultural output during variations in weather and agri-resources and crop prices, will be carried out by the Tamil Nadu Agricultural

University (TNAU), at a cost of Rs. 13 lakhs. This was revealed by Dr. A. Abdul Kareem, Vice Chancellor, TNAU.

Under the project, the research investigators will develop improved crop strategies for pest

and plant disease management, optimise nitrogen and water use in rice-based cropping systems, extrapolate genotype by environmental interactions and perform agro-ecological zonation based on crop production potential.

Dr. Kareem said environmental factors influenced the crop growth rate and also determined whether a particular crop could be successfully cultivated at a particular location.

He said Dr. T.M. Thiyagarajan, Professor of Soil Science, would be the principal investigator for this inter-disciplinary project at the university. Crop simulation could help interpret data from field experiments, and explain yield differences in a range of environs. Given the bench mark for a particular crop, its location and season, it was possible to assess how far the current yields were below the potential yields, and the scope for improvement

When used in conjunction with climatic data, simulation could quantify the temporal and spatial variation in potential productivity across agro-ecologies, in a way which is not possible through field experiments.

In view of the available resources, increases in crop production would have to be achieved despite lesser land area, scarce agricultural labour, limited water supply, and lesser chemical pesticides. Agriculture should be sustainable, despite the conservation of scarce resources.

In the eighties, there was a fall in yield, mainly because of diminishing returns to fertilizer and other "non-land inputs" in intensive irrigated rice production.

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## *News from AICTE*

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### **Programmes on Doordarshan**

Through programmes on Doordarshan, All India Council for Technical Education is proposing expositions on technology addressed to the society at large. These expositions will create greater awareness of the wide sweep of technology and its pervasive impact on the economic development and quality of life. These programmes will help in capacity building at all levels to harness technology and trigger indigenous innovations for increasing productivity, value addition and generating national wealth. For effective interaction with a wide section of population, Doordarshan is a powerful medium to reach the target groups of people. Doordarshan has allotted a number of slots on different channels for daily telecast.

AICTE proposes to launch the programme shortly.

#### **Information Facilitation Centre**

AICTE is developing a user friendly database package for information retrieval about the approval status of the institutes and current position, so that routine information can be made available to the visitors at the information desk. This facility will further be enhanced with GOI interface and access to regional offices.

#### **Networking of Technical Institutes**

For networking amongst AICTE, its Regional Offices and engineering institutes a MoU between AICTE and NIC has been signed. Implementation of the networking is in progress.

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## *News from UGC*

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### **Countrywide Classroom Programme**

Between 22nd and 26th March, 1998 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. four days a week i.e. on Tuesdays, Thursdays, Saturdays and Sundays. On DD2 University Video Lecture Courses will be shown at midnight between 0000-0030 hrs.

and in the morning between 10-10.30 a.m. on Monday through Friday.

Hindi Programmes are being telecast on Mondays, Wednesdays & Fridays from 6.00 to 6.30 a.m.

**22.3.98**

"The Kagzi Trail"

"Puppetry Video Workshop — "Prevention is the Only Cure"

"A Touch of Adventure-2"

**UVLC**

No Telecast

**23.3.98**

"Physics of Music-III"

"Deriving Music Mathematically"

"The Growth of a Poet-1 : William Words Worth"

"Exciting Worlds of Hydrogels-1 : An Introduction"

"Deep Sea Mission"

"Water, Water, Everywhere"

### UVLC

"Smarta Regional Tradition"

"Cells in Reproduction Mitosis & Meiosis"

**24.3.98**

"Browsing the Frontiers of Information Technology-3"

"The Great Pyramid — A Tomb or as Observatory"

"Cacti — A Beauty in the Wilderness"

"Green House Effect"

"The Growth of a Poet-2 : William Words Worth"

"Science Behind Miracles-1"

"Communication among Honey Bees"

"Museums Around the World : British Museum-London"

### UVLC

"Social Disorganization"

"Riemann Integration-III"

**25.3.98**

"Arsenic Contamination-4 : Clinical Treatments of Arsenicosis"

"Shelly The Romantic & the Idealist"

"Metallurgical Marvels of India : Extraction of Zinc"

"Mapping Our Earth"

"Snakes"

### UVLC

"Flooring Materials"

"Theories of Tides"

**26.3.98**

"Silver Magic-2"

"The Samanthas" an Anthrop Vision"

"Question Time-59"

"Triumph of the Spirit"

"Byron.... Byron... Byron...-1"

"Role of Remote Sensing in Disaster Management-1"

"Mathemajik"

"Coleridge's Lament"

### UVLC

"Indian Federation : Development"

"Aggregate Demand and Supply"

### Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

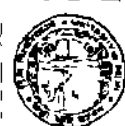
**23.3.98**

"हिन्दू टैंपल शिखर-2"

"क्रांतिकारी मदन लाल धोंग्रा"

**25.3.98**

"बेसिक ऑफ पॉल्ट्री फार्मिंग"



## UNIVERSITY OF DELHI

Ref Estab IV/Advt-157/98

Dated February 24, 1998

Applications are invited on the prescribed form for the following posts, so as to reach the Registrar, University of Delhi, Delhi-110 007, latest by 3-4-1998

Sl No	Department / Post / No of Posts / Reservation & Specialization / Desirable qualifications, if any
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1	<b>Anthropology Reader (1)</b> Physical Anthropology Specialization / Desirable Any branch of Physical Anthropology
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2	<b>Chinese &amp; Japanese Studies Professor (1)</b> Japanese History Specialization / Desirable Modern Japanese History
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3	<b>Campus Law Centre Reader (2)</b> Lecturer (2) (Un-reserved), Part-time Lecturer (5) (Reserved for SC-1, ST-1 and UR-3)
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4	<b>Law Centre-I Lecturer (3)</b> (Reserved for ST-1, and Un-reserved-2), Part-time Lecturer (5) (Reserved for SC-1, ST-1 and UR-3)
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Part-time Lecturers are expected to teach the procedural subjects as well as substantive courses

5	<b>Law Centre-II Part-time Lectures (4)</b> (Reserved for SC-1 ST-1 and UR-2)
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6	<b>Modern Indian Language &amp; Literary Studies Lecturer (2)</b> One in Tamil - UR and One in Telugu (Reserved for SC) Tamil Specialization in Folklore in Tamil
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Desirable Knowledge of additional Indian language other than Tamil

Telugu Specialization in some work in the field of comparative Indian literature

Desirable Knowledge of additional Indian language other than Telugu

7	<b>Physics &amp; Astrophysics Professor (1) Reader (1)</b>
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8	<b>Sociology Lecturer (1) UR</b>
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SC- Scheduled Caste, ST-Scheduled Tribe, UR- Unreserved

### SCALE OF PAY

Professor : Rs 4500-150-5700-200 7300

Reader Rs 3700-125-4950-150-5700.

Lecturer Rs 2200-75-2800-100-4000, Part-time Lecturers in Law Rs 2500/- P.M. (Consolidated)  
(For teaching at least Nine Periods-per week)

All the above posts carry DA, CCA, HRA etc. as admissible under the rules in force in the University from time to time

Application forms for the above posts and details regarding qualifications can be had from the **Establishment Branch-IV (Room No 205), New Administrative Block, University of Delhi, Delhi-110 007**, during working days (from 9 30 a.m. to 12 30 p.m. and 2 00 p.m. to 5 00 p.m.) either personally or by sending a self addressed & postage stamped envelope worth Rs 16/- (size 13 cms x 28 cms)

### APPLICATION FEE

Application fee of Rs 100/- (Rs 25/- in case of SC/ST) (Non-Refundable) for each post in the form of Indian Postal Orders/ Bank Draft drawn in favour of the Registrar, University of Delhi payable at Delhi/New Delhi is required to be submitted alongwith the Application Form. Candidates must write their name and post applied for on the backside of the Bank Draft/Indian Postal Order

### NOTE

- 1 It will be open to the University to consider names of suitable candidates who may not have applied.
- 2 Number of posts is given within parenthesis against each post.
- 3 University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant.
- 4 Relaxation of any of the qualifications may be made in exceptional cases on the recommendations of the Selection Committee.
- 5 For Professor and Reader other things being equal preference will be given to SC/ST candidates.
- 6 3% posts of lecturers are reserved for Physically Handicapped candidates

(K. K. PANDA)  
REGISTRAR

## Population Environment Dynamics — 4

	Population (millions) mid-1997	Natural increase (annual, %)	Projected Population (millions) 2025	Deaths under Age 5 per 1,000 children 1995	Per cent under Age 5 under weight 1990-96	Annual Renewable Fresh Water Available per capita (cubic meters) 1990 2025	Per cent with access to safe water 1990-96	Per cent with adequate sanitation 1990-95	Cropland available per capita (hectares) 1990 2025	PPP per capita <sup>1</sup> (int'l \$) 1995	CO <sub>2</sub> emissions per capita (metric tons) 1992
World	5,840	1.5	8,036	70	—	9,255 5,896	—	—	0.26 0.16	6,045	3.8
North America	298	0.6	372	10	—	19,464 14,211	—	—	0.84 0.63	26,389	18.6
Canada	30.1	0.5	36.6	8	—	104,386 75,811	—	—	1.65 1.20	21,130	14.4
United States	267.7	0.6	335.1	10	—	9,915 7,483	—	—	0.75 0.57	26,980	19.3 <sup>2</sup>
Latin America & The Caribbean	490	1.8	691	46	10	29,818 18,359	75	60	0.35 0.22	5,824	2.2
Argentina	35.6	1.2	47.2	27	—	30,540 21,546	71	68	0.84 0.59	8,310	3.5
Bolivia	7.8	2.6	13.2	105	16	45,641 22,847	66	55	0.35 0.18	2,540	1.0
Brazil	160.3	1.4	212.9	60	7 <sup>2</sup>	46,809 30,185	73	44	0.40 0.26	5,400	1.4
Chile	14.6	1.5	19.5	15	1	35,579 23,666	—	—	0.33 0.22	9,520	2.6
Colombia	37.4	2.1	51.3	36	8	33,127 21,678	85	85	0.17 0.11	6,130	0.0
Costa Rica	3.5	2.0	5.6	16	2	31,301 16,940	96	84	0.17 0.09	5,850	2.9
Cuba	11.1	0.7	11.8	10	—	3,303 2,765	89	92	0.31 0.26	—	—
Dominican Republic	8.2	2.1	11.7	44	10	2,813 1,791	65	78	0.20 0.13	3,870	1.4
Ecuador	12.0	2.3	18.3	40	17 <sup>2</sup>	30,592 17,648	68	76	0.27 0.15	4,220	1.8
Guatemala	11.2	3.0	21.7	67	27	12,613 5,354	64	59	0.20 0.09	3,340	0.6
Haiti	6.6	1.8	9.8	124	28	1,696 838	28	24	0.14 0.07	910	0.1
Mexico	95.7	2.2	140.8	32	14 <sup>2</sup>	4,224 2,614	83	72	0.29 0.18	6,400	3.8
Nicaragua	4.4	3.1	7.6	60	12	47,606 19,275	53	60	0.35 0.14	2,000	0.6
Peru	24.4	2.2	35.5	55	11	1,853 1,090	72	57	0.17 0.10	3,770	1.2
Venezuela	22.6	2.1	34.5	24	6	67,532 37,872	79	59	0.20 0.11	7,900	1.6 <sup>2</sup>

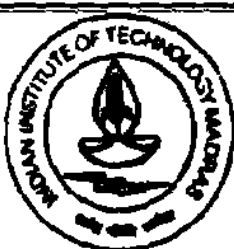
Notes: 1 PPP Per Capita Purchasing Power Parity is an estimate of a country's gross national product (GNP) per person. The estimates are converted to international dollar by adjusting for the buying power of the country's currency.

2 Data collected from a year or period other than the one listed, differ from the standard definition; or refer to only one part of a country.

Source: Population Reference Bureau, 1875 Connecticut Ave., NW, Suite 520, Washington, DC 20009 USA.

(Concluded)





# INDIAN INSTITUTE OF TECHNOLOGY, MADRAS

## ADMISSION TO M.Sc., M.S., M.S. (Sponsored/Entrepreneurship) AND Ph.D. PROGRAMMES JULY 1998

### 1. M.Sc. Programme : Chemistry/Mathematics/Physics

#### Minimum Qualification :

1st class or 60% (55% for SC/ST candidates) marks in B.Sc. Chemistry/Maths/Physics. Candidates having a B.Sc. degree with Chemistry, Mathematics and Physics as main subjects or with a B.Sc. degree in Applied Sciences are also eligible.

**Scholarship :** Some full and part tuition fee concessions are available.

### 2. M.S. and Ph.D. Research Programmes

i. **Ph.D. and M.S. with/without Half-time Teaching/Research Assistantship in the areas of Aerospace Eng., Applied Mech. (including Biomedical Eng.), Chemical Eng. (including Biotech), Civil Eng., Computer Science & Eng., Electrical Eng., Management (All functional areas including Production, Finance, Marketing), Mechanical Eng., Metallurgical Eng. and Ocean Eng.**

ii. **Ph.D. with/without Half-time Teaching/Research Assistantship (HTRA) in the areas of Chemistry, Maths, Physics, Economics, German, English, History and Psychology**

#### Minimum Qualification :

\* **For Ph.D. :** First class or a minimum of 6.5 CGPA in M.E./M.Tech./MBA or equivalent Master's degree holders in Science, Social Sciences, Commerce and Humanities subjects should have a valid GATE score or UGC/CSIR fellowship.

B.Tech./B.E. degree holders, eligible for M.Tech. Admission by virtue of their GATE score are also eligible for direct admission to Ph.D. in Eng. areas provided they must be within top 25% of the class in IITs/IISc or within top 10 ranks in Universities.

\* **For M.S. :** First class or a minimum of 6.5 CGPA in B.Tech./B.E. with a valid GATE score or UGC/CSIR fellowship. For certain areas, Master's degree holders of Sciences and Humanities subjects with a valid GATE score or UGC/CSIR fellowship.

iii. **M.S. (Entrepreneurship)** Minimum qualification as indicated above for M.S. The objective of this programme is to provide young engineers with excellent facilities for developing products in high-tech areas with market potential and to start their own industries to manufacture the products they have developed.

iv. **MS (Sponsored)** programme without assistantship is available for candidates sponsored by R&D Institutions/Industries/Engineering colleges recognised by AICTE with full salary and leave for 18 months. GATE score is not required for sponsored candidates.

v. **External Registration for M.S. and Ph.D.** programmes without assistantship is available for candidates sponsored by R&D Institutions/Industries. Candidates must possess the minimum qualifications mentioned earlier. GATE score is not required for External registration. Teachers of Universities/Colleges will not be considered under this scheme. Upper age limit for M.S. and Ph.D. is 35 and 45 years respectively.

### 3. Opportunities exist for research work in the following Centres :

Biotechnology Research Centre, Materials Science Research Centre, Regional Sophisticated Instrumentation Centre, Composites Technology Centre and Centre for Systems and Devices.

4. Opportunities are also available to work on Sponsored Research and Consultancy Projects in Dept./Centres as Project Staff, if selected.

### 5. Half-Time Teaching/Research Assistantship (HTRA)

Candidates selected for Ph.D. and M.S. Engineering programmes under Regular Scheme (other than Sponsored and External Scheme) are eligible for HTRA of Rs. 3000/- p.m. and 2500/- p.m. respectively. Candidates selected for Ph.D. programmes in Sciences and Humanities disciplines are eligible for HTRA of Rs. 2500/- p.m.

Some candidates may also be selected on merit without HTRA, if all the assistantship seats are filled up.

### 6. Other Fellowships :

Other fellowships are also available in certain Departments for research. Details are available in the Admission Brochure.

### 7. For Application Form :

Separate application form should be submitted for each programme/department. Please write to the Deputy Registrar (Acad.), IIT, Madras, Chennai-600 036 with a crossed demand draft for Rs. 200/- drawn in favour of "IIT, Madras" on any nationalised bank payable at Chennai and two self-addressed slips (5 cm x 10 cm) in capital letters. The cover must be superscribed as "APPLICATION FOR ... PROGRAMME".

### 8. Last Dates :

Request for application form by post	15th April 1998
at the Institute Counter	22nd April 1998
Receipt of completed application form	22nd April 1998

DEPUTY REGISTRAR (ACAD)

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## BOOK REVIEW

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### A Task without an End

M.S. Ramamurthy\*

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**Banerjee, Utpal K. Ed. Computer Education in India : Past, Present and Future. New Delhi, Concept Publishing Company, for the Institution of Electronics and Telecommunication Engineers, 1996. Pp. x+569. Rs. 750/-.**

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As a child, which was more than five decades ago, I once asked my mother why she put a knot on the loose end of her saree falling on her back. I remember her telling me that it was memory aid so that she does not forget to do something. Today my mother still wears a saree but does not have to tie a knot in her saree. She knows how to use an electronic diary where she can store jobs to be done in the weeks to come. As far as my mother is concerned, who has never formally studied beyond Class III and has been a devoted housewife all her life, the electronic diary is only an aid to her fading memory. She does not care nor need to know all other functions which an electronic diary is capable of doing or the fundamentals of its working. For her it is a valuable, helpful gadget.

A good number of children in urban India, aged 8 or even less, are aware of a computer and a large number of them can play various computer games. Thanks to Clubs like LEDA, thousands of children have come to see computer as an aid to learning. My grandson aged 8 enlightens the children of the servants in his house what the computer games are all about and how he is able to be ahead of his classmates in his studies. The computer at

home and the indulgence of his parents who bring him all the required CDs have helped him. The transformation in my mother and comfort level of my grandson in handling the computer show how much systems for information storage and retrieval, for education and entertainment, have percolated into urban middle class society in India in the last couple of years. More importantly, the skills required to operate their respective gadgets in my near illiterate mother and the kid of a grandson were acquired with some tutoring and practice. Technology jettisons generation gaps.

Information has always been vital for humans — be it for the basic necessity of survival or for ensuring progress. And, as civilization advanced, complex needs emerged needing more and more information. Today information is accepted as an invaluable resource in every human activity. The very gigantic quantum of information now available and also needed, required aids to do complex analyses, integrate and help to decide on the best course of action to be taken. In this context, one does not have to emphasise the indispensability of a computer in modern day, be it in industry or commerce or in management of any institution or in making learning friendly. Nor is it necessary to clarify that a computer, being a computer, as of now requires a human being who knows

what she wants and also knows how to interface with the machine. Education and training in computers has therefore come to assume the proportion of a huge and multi-dimensional task. Even if a truism, needs stating.

In the backdrop of the above, it is only welcome that the All India Council of Technical Education sponsored a publication to give the history of computer education in India.

Part I, comprising 11 chapters, takes the reader through the evolution and the challenges faced by the pioneers in introducing education in computers in the universities. The efforts made then by the Indian Statistical Institute, the Indian Institutes of Technology at Kanpur and Bombay, the Tata Institute of Fundamental Research, the Indian Institute of Science etc, get documented in these chapters. A couple of these chapters also take us through the vision of some Scientists e.g. Homi J. Bhabha, Vikram Sarabhai etc, who strongly felt the need for developing indigenous capability of building computers and the efforts made towards that end. Dutta Majumder's "Thoughts on Emergence of IT activities in India" brings out clearly the commitment of a doyen in many areas and a visionary, Prof. P.C. Mahalanobis.

The narration stands out for another aspect, viz, in portraying the awe of a newcomer, standing before a living legend and the old world charm of instinctive respect for the person.

The final chapter of this part laments the lack on the part of our universities of a "leadership role in areas such as Computer Science". A true concern indeed. The chapter needs to be seen by those who are

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\*Former Editor, *University News*,  
Educational Consultant, NIIT,  
New Delhi-110 019

genuinely concerned with the healthy growth of higher education in Computer Science and for our premiere higher education institutions to address themselves to this issue. Not an easy task, by any means. .

Part II dealing with the Formal Education Scenario is history of another kind. It gives the reader an idea of the coverage in computer studies in schools, polytechnics, engineering colleges, the IITs, in some universities and for different levels, in some deemed to be universities, in postgraduate disciplines, in higher research and in some specialised areas like AI, Expert Systems, etc. As far as this reviewer is aware, this is the first book which gives at one source so much of syllabuses followed in different institutions.

Part III surveys the continuing education scenario in professional bodies like CSI, IETE etc, under public administration (NIC), in government sector, under defence sector, in other academic bodies as also on DoEACC. The Part ends with a Chapter on education issues in Indian scenario. Most of the chapters give a glimpse of the syllabi in their respective institutions. The chapter on Computers in Higher Education carries the results of a survey conducted by three universities in these regions of the country. The findings of the survey are revealing and should goad the authorities to devise ways and means of making optimum use of the resources created, funded at taxpayers' cost. Chapter 7 which is on "Computer Training in Private Sector" makes a significant observation : " .....importance of developing a healthy and strong training sector which is crucial to the process of technological absorption". (emphasis added) The authors, after showing the importance of information in the changed scene of society moving to an information age from an industrial age, state that


the "built-in structural inertia" on the part of "traditional education" (i.e. university education) prevents the same from adjusting to "paradigm shift" which is what has happened when society has moved away from industrial age to an information society. They argue forcefully as "to the vital need for a healthy and competitive IT training industry, and the fact that it can, and should, be sustained and made to grow rapidly." This chapter also has very many important data as appendices.

Chapter XI is all about DoEACC, whose author is a Consultant to DoEACC. It is in a way a documentation of the scheme. It also carries a SWOT analysis and an identification CSFs which is revealing. As per their inhouse analysis, in spite of achieving more than what was planned in seven of the identified CSFs, viz. Media Support, Support of Authority, Clear Policy, Procedures, Flexibility, Leadership, and Review, in terms of the two other items viz. Awareness and Marketing, the scheme lagged behind the plan. Marketing may increase awareness. But can marketing alone ensure success today when the market has become more choosy? needs to be pondered over.

Part IV "puts together, in full or in part,..... important endeavours which are available in the form of reports, statements and position papers" to document the "need, nature, quality and directions for computer education". Very welcome at one place.

All in all the book is a good collection of history and evolution of computer education in India, valuable for researchers and future historians. One would have also welcomed fewer printing errors.

Documenting history is a continuous process. Some one has to keep track all the time. More importantly, what comes out is that in such a dynamic field as computer and IT where fast obsolescence is a rule, education and training is a task without an end. Computer professionals know this aspect only too well. It is time the extensive training sector that has come to be built up purely through private initiative is seen as complementing the formal education in computer studies as IT is the latest valuable identified resource for building a more informed society and for assuring a better quality of life. Bold initiatives are needed for meeting desirable ends.



## Yama

**The Glorious Lord of the Other World**

**KUSUM PRADEEP MERH**

*(Reconstructing Indian History & Culture, no 12)*  
xvi, 302 p ; Abbreviations, Bibliography, Glossary,  
Index, 15 b/w Photographs, 23 cm  
**ISBN 81-246-0066-X**

**Rs. 340**

The image of Yama, the god of death in Hindu mythology, has come to have many variants. Dr. Kusum P. Merh's study tries to capture these against their essential literary settings to explore all possible traits of Yama's personality. The author, focusing on Yama, the creator, the preacher, the philosopher, the law-giver and, above all, on his role as an eschatologist, highlights how the mythical view of Yama has undergone a striking change over the millennia.

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# THESES OF THE MONTH

## A list of doctoral theses accepted by Indian Universities

### AGRICULTURAL AND VETERINARY SCIENCES

#### Plant Pathology

- 1 Singh, Tirath Selection, mass production and efficacy of VA Mycorrhizal fungi against chickpea wilt. Department of Plant Pathology, Punjab Agricultural University, Ludhiana

### BIOLOGICAL SCIENCES

#### Biochemistry

- 1 Bajpai, Malini Biochemical investigations on isolated germ cells from the testis of rat. (Dr B S Setty), Department of Biochemistry, Jamia Hamdard, Hamdard Nagar, New Delhi
- 2 Goud, Krishnaiah V Effect of turmeric/curcumin on (*Curcuma longa*, linn) xenobiotic metabolism and carcinogenesis. (Dr Kamalakrishnaswamy), Department of Biochemistry, Osmania University, Hyderabad
- 3 Padigel, Udaikumar Mahanand Studies on invivo released filarial antigens. (Dr B C Harinath), Department of Biochemistry, Nagpur University, Nagpur

#### Bioscience

- 1 Khwaja, Fatima Shazli Biochemical studies of oxalate oxidase in tomato (*Lycopersicon Esculentum*). (Prof Arif Ali), Department of Bio-Science, Jamia Millia Islamia, New Delhi

#### Botany

- 1 Baruah, Kum Kum In vitro propagation of *albizia chinensis* (Osbeck) Merr (Prof B C Goswami), Department of Botany, Gauhati University, Guwahati
- 2 Corrie, Branson Sydney Social forestry in Meghalaya: A technical assessment. (Prof C M Sarma), Department of Botany, Gauhati University, Guwahati
- 3 Patel, Jogita Mohan Aerophycological studies of the Nagpur environment. (Dr J L Tarar), Department of Botany, Nagpur University, Nagpur
- 4 Sushama, P R Regeneration studies in French bean (*Phaseolus vulgaris* (L) (Dr S N Chary), Department of Botany, Osmania University, Hyderabad
- 5 Tasneem, Faiqa Efficacy of certain plant extracts in the control of rice diseases (Dr Rana Kauser), Department of Botany, Osmania University, Hyderabad

#### Genetics

- 1 Anuradha, G Single cell gel electrophoresis (SCGE) on the leucocytes of patients with precancerous and cancerous lesions of the cervix (Prof Y R Ahuja), Department of Genetics, Osmania University, Hyderabad
- 2 Reddy, Umesh Kumar O Physiological and molecular characterization and genetics of temperature sensitive male sterile sources for heterosis breeding in rice. (Dr E A Siddiq), Department of Genetics, Osmania University, Hyderabad.
- 3 Sunil Kumar Immunological studies on the efficacy of BCG vaccination in children. (Dr K J R Murthy), Department of Genetics, Osmania University, Hyderabad

#### Life Sciences

- 1 Changsan, Zawlhthanglien. Biochemical studies of certain varieties of chillies (*capsicum annum* L & *C frutescens* L)

in Manipur with special reference to capsaicin, capsaicinoids, sugar, protein, fat, ascorbic acid, phenol, chlorophyll and moisture contents (Prof L Janmejay Singh), Department of Life Sciences, Manipur University, Imphal

- 2 Ghosh, Bhanusingha A neurochemical examination of the circadian system and signal transduction for entrainment. (Prof M Habibulla), Department of Life Sciences, Jawaharlal Nehru University, New Delhi

- 3 Manohara, M S Protoporphyrin IX biosynthesis in the cell free system of cucumber (*Cucumis sativus* L). (Dr B C Tripathy), Department of Life Sciences, Jawaharlal Nehru University, New Delhi

#### Microbiology

- 1 Godbole, Suchitra Shrinish Studies on the production of microbial polyesters from wastes using biotechnological route. (Dr T Chakrabarti), Department of Microbiology, Nagpur University, Nagpur
- 2 Peshwe, Swati Ajay Application of microbial biotechnology for total biomass production of cassia siamea and eucalyptus camaldulensis on wasteland. (Dr S U Meshram), Department of Microbiology, Nagpur University, Nagpur

#### Zoology

- 1 Acharjee, Bul Bul Ecological status and productivity potential of some beels in lower Brahmaputra basin Assam. (Prof Amallesh Dutta), Department of Zoology, Gauhati University, Guwahati
- 2 Ansal, Meera Devi Effect of Exogenous hormones on growth and flesh composition of Indian major carp-*Cirrhina mrigala*. Department of Zoology, Punjab Agricultural University, Ludhiana
- 3 Borah, Likhak Chandra Impact of jassid(*Empoasca flavescens fabro* infestation of some quality attributes of tea (*Camellia Sinsnsis* (L) O Kuntze). (Prof H C Mahanta and Dr P K Mahanta), Department of Zoology, Gauhati University, Guwahati
- 4 Khosla, Navita Synthesis and characterization of some mannich bases. (Dr Sheela Joshi), Department of Zoology, Devi Ahilya Vishwavidyalaya, Indore
- 5 Kumar Mahesh, K. Certain female reproductive biological studies on an insect pest towards its effective management. (Dr P Nagarajao), Department of Zoology, Osmania University, Hyderabad.
- 6 Padmaja, Basavaraju. Effects of certain plant extracts in the control of yellow fever mosquito *aedes aegypti* (L)(Diptera: Culicidae). (Dr G Maruthuram), Department of Zoology, Osmania University, Hyderabad
- 7 Ravinder, K Behavioural and biochemical studies of odoriferous glands of insects. (Prof C Janaiah), Department of Zoology, Kakatiya University, Warangal
- 8 Reddy Manohar, V Ungulate ecology and tribal dependence on forest ecosystem at Mahadevpur Reserve Forest, Karimnagar Dist., Andhra Pradesh. (Dr V Nagulu), Department of Zoology, Osmania University, Hyderabad
- 9 Tiwari, Sudha Benthic studies on Bichhia river with special reference to macro zoo benthos. (Dr Vinodni Nigam), Department of Zoology, Awadhesh Pratap Singh University, Rewa(MP)

## EARTH SYSTEM SCIENCES

### Environmental Science

1 Bipul, Kumar **Characterization and treatment of spent pot liner for environmental compliance.** (Prof Gurdeep Singh), Department of Environmental Science, Indian School of Mines, Dhanbad

### Geology

1 Das, Dharendra Nath **Geology of the precambrian rocks between Goalpara town and Lengupara Goalpara district, Assam.** (Prof O K Chowdhury), Department of Geological Science, Gauhati University, Guwahati

2 Mathur, Ramavati **Geochemistry of carbonates and carbonaceous sediments from Cuddapah basin and its relevance with the biogeochemical processes during early-middle proterozoic.** (Dr S M Naqvi), Department of Geology, Osmania University, Hyderabad

3 Mohanty, Ashok Kumar **Structural evolution and stratigraphy of the South-Central part of the Manganese belt of central India near Mansar, Nagpur district, Maharashtra.** (Dr S Mohanty), Department of Geology, Indian School of Mines, Dhanbad.

4 Rao, Sasanapuri Manmadha **Study of cyclicity in lower Gondwana sediments of Jharia coalfield.** (Prof S Basumallick and Dr R P Verma), Department of Geology, Indian School of Mines, Dhanbad

5 Venkateshwarlu, M **Magnetostratigraphic studies of the siwalik sediments at Nurpur and Kotla, Kangra district, Himachal Pradesh, India** (Prof M Venkateshwara Rao), Department of Geology, Osmania University, Hyderabad

## ENGINEERING SCIENCES

### Chemical Engineering

1 Bhoi, Arun Vitthalrao **Application of dissolved air floatation for water and wastewater treatment** (Dr A S Bal Neer), Department of Chemical Engineering, Nagpur University, Nagpur

2 Ghare, Nikhil Yeshwant **Treatment of hydrochloric acid laden spent pickle liquor with recourse to recovery of acid** (Dr A S Bal), Department of Chemical Engineering, Nagpur University, Nagpur.

3 Vishwanadham, B **Studies on reaction kinetic of hydrogenation of vegetable oils in slurry reactor.** (Prof M Bhagwanthrao and Dr A A Khan), Department of Chemical Engineering, Osmania University, Hyderabad

## MATHEMATICAL SCIENCES

### Mathematics

1 Baishya, Promod Chandra **Mixed fuzzy topological space.** (Dr Nanda Ram Das), Department of Mathematics, Gauhati University, Guwahati

2 Dharmaiah, V **Spectral results for operator valued functions and applications.** (Dr N Gopal Reddy), Department of Mathematics, Osmania University, Hyderabad

3 Dixit, Lalit **A study of meromorphic univalent and multivalent functions.** (Prof Iqbal Ahmad), Department of Mathematics, Jamia Millia Islamia, New Delhi

4 Reddy, Surender B **Multiparameter spectral theory of weakly coupled operator system in Hilbert spaces.** (Dr N Gopalreddy), Department of Mathematics, Osmania University, Hyderabad

5 Tripathi, Manmohan Prasad **Summability of fourier series and its allied series.** (Dr M P Sachan), Department of Mathematics, Awadhesh Pratap Singh University, Rewa (MP).

### Statistics

1. Goswami, Gih. **A study on correlates of fertility and fertility parameters of an urban society in Assam: An analysis through models.** (Dr D C Nath), Department of Statistics, Gauhati University, Guwahati.

2 Lunge, Harihar Shrinamji **Some new methods in linear and non linear programming.** (Dr P G Khot), Department of Statistics, Nagpur University, Nagpur.

## MEDICAL SCIENCES

### Immunology

1 Bhawe, Neeta Suhas **Role of physical exercise in diabetes mellitus.** (Dr B L Golhar), Department of Medicine, Nagpur University, Nagpur

2 Raikwar, Sudhanshu Premchand **Cell surface expression of beta subunit of human chorionic gonadotropin using recombinant human adenovirus.** (Dr Sudhanshu Vrat), Department of Immunology, Jawaharlal Nehru University, New Delhi

### Pharmacy

1 Ahuja, Alka **Development of bioadhesive drug delivery system.** (Prof R K Khar), Department of Pharmacy, Jamia Hamdard, Hamdard Nagar, New Delhi

## PHYSICAL SCIENCES

### Chemistry

1 Devi, Arundhuri **Impact of oil field operations on soil quality near upper Assam oil fields.** (Prof K G Bhattacharyya and Late Dr P C Goswami), Department of Chemistry, Gauhati University, Guwahati

2 Haseebuddin, Syed **Synthesis and characterisation of polyurethane polyols and their use in high solids coatings.** (Dr M Yaseen), Department of Chemistry, Osmania University, Hyderabad

3 Mahakkal Babu, I **Kinetic and catalytic studies on the thermal decomposition of Barium nitrate by thermogravimetry.** (Dr T D Radhakrishnan Nair), Department of Chemistry, University of Calicut, Calicut

4 Misra, Gautam Krishna **Synthesis and characterization of a few high silica zeolites** (Prof K G Bhattacharyya), Department of Chemistry, Gauhati University, Guwahati

5 Rao, T V D Prasad **Electrochemical reduction of some Schiff bases.** (Dr G Veerabhadram), Department of Chemistry, Osmania University, Hyderabad

6 Reddy Chandra Sheker, A **Studies on the synthetic and structural aspects of novel trifluoromethyl substituted heterocycles** (Dr R V Venkata Ratnam), Department of Chemistry, Osmania University, Hyderabad

7 Reddy, Bandi Pardha Saradhi **Chemical examination of *taxus baccata* and synthesis of oxygen heterocyclics as potential anti-cancer agents.** (Prof G L David Krupadanam), Department of Chemistry, Osmania University, Hyderabad

8 Reddy, Somender P **Anodization of Zircaloy-4 and titanium in some suitable electrolytes.** (Prof K S Sastry), Department of Chemistry, Osmania University, Hyderabad

9 Sekar, R **Studies on new analytical methodologies for some drugs and pharmaceuticals.** (Dr Sajid Husain), Department of Chemistry, Osmania University, Hyderabad

10 Snivankar Vidyadhar Mukundrao **Comparative studies of different adsorbents and adsorptions.** (Dr G K Ghoshal), Department of Chemistry, Nagpur University, Nagpur

11 Suseela, T **Structural studies on transition metal complexes derived from some symmetric and unsymmetric bischelating ligands** (Prof V Jayatyagaraju), Department of

Chemistry, Osmania University, Hyderabad

12 Vatsala Rani, J. Mechanism of electrolytic oxidation of hafnium and niobium: Kinetic studies. (Dr Ch Anjaneyulu), Department of Chemistry, Osmania University, Hyderabad

13 Verghese, Manju Mary Application of some conducting polymers: polyaniline and polycarbazole (Dr S M Ashraf), Department of Chemistry, Jamia Millia Islamia, New Delhi

Physics

1 Das, Biren Studies on radio emission at lower frequencies from vertical and inclined large eas. (Prof K M Pathak and Dr G K D Mazumdar), Department of Physics, Gauhati University, Guwahati.

sity, Guwahati.

2. Garg, R K Photoacoustic spectroscopic studies of substituted polycyclic aromatic hydrocarbons. (Prof Z H Zaidi), Department of Physics, Jamia Millia Islamia, New Delhi.

3 James, Ajit Raymond Synthesis, impedance spectroscopy and Magnetic studies on some bismuth layer structured materials. (Prof T Bhimasankaram), Department of Physics, Osmania University, Hyderabad

4 Rangan, Anand Domaji. Investigation of photoacoustic effect in conducting polymers. (Dr Vilas A Tabhane), Department of Physics, Nagpur University, Nagpur.

# NCERT

## Admission Announcement 1998-99

### Post-Graduate Diploma Course in Guidance and Counselling 1998-99

Applications are invited for admission to a Post Graduate Diploma Course in Guidance and Counselling offered by the NCERT for the session 1998-99. The course will commence on **3rd August, 1998**.

Admission to the course is on all India basis. Admission test and interview will be held on **19th June, 1998** at Allahabad, Bangalore, Bhubaneswar and New Delhi. Candidates may take the admission test in English or Hindi. Exact venue of the test and interview will be intimated to the candidates by post. No TA/DA will be paid for appearing in the Admission test.

**Duration of the Course :** 9 months

**Seats :** 35

**Scope :** Candidates after passing this course will be eligible for recruitment to the post of Guidance Counsellor in the schools, State Bureaus of Guidance and Child Guidance Clinics etc.

**Eligibility :** Master's degree in Psychology or Education with atleast 55% marks. Relaxation of 5% marks for SC/ST candidates is allowed.

**Age :** Preferably below 40 years as on the date of admission.

**Tuition Fee :** A tuition fee of Rs. 250/- per month will be charged from every candidate except SC/ST candidates.

**Scholarships :** 20% scholarships @ Rs. 500/- per month shall be given to poor but meritorious students including SC/ST categories so long as they continue to perform well as per the existing norms.

**Reservations :** 15% seats are reserved for Scheduled Castes and 7.5% for Scheduled Tribes.

**How to apply :** Applications on Plain paper written clearly, mentioning the following details along with attested copies of marks sheets, and SC/ST certificates wherever applicable should reach at the address given below latest by **1st May, 1998**.

1 Name (in block letters) 2 Sex 3 Address (in Block letters) 4 Telephone No. if any 5 Whether belongs to SC/ST 6. Date of birth 7 Educational qualifications (in any tabular form) mentioning examinations passed, name of the University, percentage of marks, year of passing, papers/subjects offered 8 Experience, if any 9 Names and complete addresses of two referees who have taught the candidate in the last University/College 10. Centre where candidate will like to appear for Selection Test and Interview. Tick any one . Delhi/Allahabad/Bangalore/Bhubaneswar

**Note :** 1 Preference will be given to candidates sponsored by the state education department, and schools under the Registered Societies, subject to an undertaking by the employer that after passing the course the candidate's services will be utilized in the area of guidance at least for a period of three years. 2. Those in service should send their application through proper channel. 3 Applications received late or incomplete in any respect will not be considered. 4 Medium of instruction for the Course is both English and Hindi. 5 Limited hostel facilities are available.



**Head**  
Department of Educational Psychology & Foundations of Education  
National Council of Educational Research and Training  
Sri Aurobindo Marg, New Delhi-110 016

davp 97/755





**M.J.P. Rohilkhand University, Bareilly-243 006**

**Institute of Advanced Studies in Education (IASE)**

**VACANCIES**

**Last Date : 30.03.1998**

Applications are invited on prescribed form available from the Registrar of the university by sending Crossed DD for Rs 100/- for (UR) and Rs 50/- for SC/ST/OBC payable to the Finance Officer, MJP Rohilkhand University, Bareilly alongwith self addressed stamped Rs 18/- (9" x 9" size) envelope Application received after last date 30.03.98 will not be accepted Applicants who are in service may send an advance copy followed by a copy through employer/proper channel

Reservations are as per U P Govt rules and regulations However in view of a number of judgements by Hon'ble High Court/Supreme Court, the due care has been taken to follow them.

	P	R	L	
1 Teacher Education	—	2(S,O)	3(S,U,O)	Professor
2 M Ed /B Ed (Voc Edn )	—	1(S)	1(U)	(Rs 4500-7300)
3 M Ed /B Ed (Spl Edn )	—	—	1(U)	Reader
4 Media/Electronic Journalism	—	3(S O U)	3(S,O U)	(Rs 3700-5700)
5 Applied English	—	2(S/O,U)	2(S,U)	Lecturer
6 M S W	1*(U)	2(U,O)	3(S,O,U)	(Rs 2200-4000)
7 Applied & Clinical Psy	1*(U)	2(U,S)	4(S,O,2U)	S = Schedule
8 Applied Philosophy	—	1(S)	2(S/O,U)	Caste
9 Computer Application	—	1(U)	3(S,O,U)	O = OBC
10 B P Ed	—	2(S,U)	2(O,U)	U = Unreserved
11 Bachelor in Physiotherapy	2*(U)	4(S,O,2U)	6(S,O,U)	*Under Creation

Stenographer

-04 (S,O, 2U)

Animator, Producer, Sound Recordist, Editor, Maintenance Engg , Technician, Placement Officer, Computer Programmer, Computer Operator all are single post for UR

**Essential Qualifications**

**Professor**

- Eminent scholar with published work of high quality and active engagement in research and ten years experience of teaching or research and experience of guiding research at doctorate level

OR

Outstanding scholarship with established reputation for significant contribution of knowledge

**Reader**

- Good academic record with a doctorate degree and active engagement in research or innovation in teaching methods or production of teaching material,
- 5 yrs exp of teaching/research including atleast 3 yrs as lecturer/ equivalent position, provided that this requirement may be relaxed in the case of a candidate who in the opinion of the selection committee has outstanding research work to his credit

**Lecturer**

- Master's degree or an equivalent degree of a foreign Univ in the relevant subject with at least 55% marks or its equiv grade and consistently good academic record.
- Qualified NET or state comprehensive test conducted as per scheme of the U G C.
- NET qualification is relaxable if M Phil completed or submitted their Ph D thesis before Dec 31, 1993 or NET qualification is already relaxed for such subjects by UGC.

**Posts, Number, Other Desirable Qualifications**

**1A Reader in Teacher Education-02 (O-1, S-1),**

- Applied M Ed/M Ed with B Ed (Specializations)
- Ph.D in Edn/Ednl. Tech
- Teaching, research and industry exp. in learning disabled or hearing impaired, computer edn./ednl. tech /instructional

resource material devp /curriculum devp /Examination reforms/conducting In-service teacher training

**1B Lecturer in Teacher Education-03 (S,O,U)**

- Similar as above
- Preference 1A (ii), Teaching subjects, Language, Social Scs

**2A. Reader in M.Ed/B.Ed. (Voc. Edu.)-01 (S)**

- M.Tech Degree in Engg. of a recognised University in Electrical/Comp /Telecommunications/Electronics or equivalent or M.Sc Physics/electronics with Ph.D.
- Atleast 4 yrs exp in maintenance of Electronic equip e.g Radio or T.V. Broadcasting setup/maintenance & production of small scale Electric/Electronic Equip., (candidates are required to produce evidence of professional workdone)

**2B. Lecturer in M.Ed/B.Ed. (Voc. Edn.)-01 (U)**

**Other Qualification :** M Sc (Agriculture)/for B Ed (Voc Edn )

- Specialisation in Sericulture, Horticulture, Nursery Tech , Seed Production, Soil Sci , related area
- Exp in extension agricultural activities

**3A Reader in Media/Electronic Journalism-03 (S,O,U)**

- Masters Degree of a recognized univ in Electronic Jour or Mass Comm specialisation in Electronic Jour or equiv , Ph D in the relevant field (may be exempted in exceptional case)
- At least 5 yrs professional experience including teaching in print & Electronic Media/Electronic Jour /Theatre
- Having work exp in Film Direction/Production Audio video script writing, recording, editing, light control etc in recog Univ or Institute
- Exp in production of educational video films

**3B Lecturer in Media/Electronic Journalism-03 (S,O,U)**

- Similar 3A (i) except Ph D
- At least 2 yrs professional exp including teaching exp in Motion picture, photography or Cinematography in an organisation or Institution of repute and similar 3A (iii)

**4A Reader in Computer Application-01 (U)**

- M C A & Ph D in Comp Appl /Comp Sc
- Teaching, research and industrial exp in development of CAI & Multi-media packages, comp graphics, animation, D T P, Software maintenance and documentation etc
- Excellent knowledge of comp systems, LAN, Internet and comp languages

**4B Lecturer in Computer Application-03 (S,O,U)**

- M C A or PG D C A with dipl or cer\* course in multimedia graphics, animation etc
- Similar to 4A (ii)(iii)

**4C Computer Programmer (1640-2900)-01 (U)**

- PGDCA exp in Animation, graphics, CAI & multimedia package development
- Good knowledge of programming and computer language & softwares

**4D Computer Operator (1400-2600)-01 (U)**

- Similar to 4C (i)
- Good knowledge of computer hardware/software, maintenance/documentation

**5A Reader in Applied English-02 (S/O,U)**

- M.A in English/Linguistics & Ph D in the relevant field
- Teaching and research exp in communicative English
- Exp in conducting training programmes
- Preference having additional Degree in Pedagogy

**5B Lecturer in Applied English-02 (S,U)**

- Similar to SI No 5A
- 6A Reader in Applied Philosophy-01 (S)**
- i Teaching and research exp in ethics, yoga, logic, analytic philosophy, epistemology
  - ii Experience in yoga therapy
- 6B Lecturer in Applied Philosophy-02 (S/O,U)**  
Similar to SI No 6A
- 7A Professor in Applied & Clinical Psychology**
- i M A. in Applied & Clinical Psy, Ph D in Clinical Psy
  - ii Teaching and research & Industry exp in clinical psychology, psychopathology, organizational behaviour rehabilitation Psychology, etc
  - iii Exp of consultancy, counselling and therapy in different areas of psychological disorders, MR
- 7B Reader in Applied & Clinical Psychology-02 (U,S)**  
Similar to 7A (i), (ii) & (iii)
- 7C Lecturer in Clinical Psychology-04 (S,O,2U)**  
Similar to 7A (i), (ii) & (iii)
- 8A Professor in Master of Social Work-01\* (U)**
- i Masters degree in Social Work & Ph.D, M S W
  - ii Specializations-Family & child, Psychiatric Clinical, Conventional Social Work, Labour welfare, etc
  - iii Teaching, research, social welfare and Community Development exp related to social work
  - iv Exp in conducting field work and placement services for the students
- 8B Reader in Master of Social Work-02 (O,U)**  
Similar to SI No 8A
- 8C Lecturer in Master of Social Work-03 (S,O,U)**  
Similar to SI No 8A
- 9 Lecturer in Special Education-01 (U)**
- i Master degree in Audiology and Speech Pathology from AIISH (Mysore)/AYJNIHH (Bombay) or any Institute of repute
- OR
- Bachelor in Audiology and Speech Pathology with Masters degree in Education Audiology/Special Education
- ii Exp as audiologist, speech trainer
- 10A Reader in B.P.Ed.-02 (S,U)**
- i M P Ed exp organising & conducting sports meets national/ International level
  - ii Good knowledge of rules & regulations of various important sports/games of India & abroad
- 10B Lecturer in B.P.Ed.-02 (O U)**
- i M P Ed Significant participation in various sports/games at national level
  - ii Similar to 10A
- 11A Professor for Bachelor in Physiotherapy-02 (U)**
- i PG & Ph D in Physiotherapy with 5 yrs teaching, research & industry exp
  - ii Specialization-Exercise therapy/Electrotherapy, physical therapy, medicals conditions, physislog, Anatomy, etc
- 11B Reader in Physiotherapy-04 (S,O,2U)**
- i 5 yrs exp as Lecturer in physiotherapy, 3 yrs research & industry exp
  - ii Similar to 11A (ii)
- 11C Lecturer in Physiotherapy-06 (S,2O,3U)**
- i PG or graduate in physiotherapy with experience
  - ii Similar to 11A (ii)
- 12 Animator (2200-4000) (01) (U)**
- i Graduate degree in Comp Sci with 3 yrs exp in comp graphics OR Masters degree in Comp. Sci /Comp Appl exp in Comp Animation
- OR
- Dipl from National Institute of Design or equiv qualification in graphic design/animation with 2 yrs exp
- ii P.G. Dip from FTII
  - iii Exp in script writing, editing, directing and producing video films particularly educational video films
  - iv 2 yrs. exp in video production particularly ednl. TV films
- 13 Producer (2200-4000)-01 (U)**
- i P.G degree in any discipline with atleast 55% or its equivalent.
  - ii PG Diploma from FTII, Pune or equivalent
  - iii Atleast 2 years experience in the field of Production/Editing/ Script writing/Audio/Video Programme Production/ Educational Television
- 14 Maintenance Engineering (2200-4000)-01 (U)**
- i Degree in Engineering of a recog Univ. in Telecommunications/Electronics/electrical or equivalent.
  - ii Cert of completion of course conducted by FTII or equiv
  - iii 3 years experience in installation/technical operations/ maintenance of Radio/T V production equipment and facilities
  - iv Teaching exp in media
- 15 Sound Recordist (1640-2900)-01 (U)**
- i Dip in Sound Recording & Sound Engg from a recognised Institute, preferably from the Film and Television Institute of India or equivalent
  - ii Exp with Betacam System
  - iii 1 yr exp in Sound Recording either in an independent capacity or at first assistant level
  - iv 1 yr exp of repair, servicing and maintenance of sound recording equip in a Radio/TV Studio
- 16 Editor (1600-2660)-01 (U)**
- i Degree or Dip or equivalent in film editing from a recog Univ or Institute
  - ii At least 2 yrs professional exp in film editing in an organisation or institution of repute
  - iii Exp. in editing Betacam, Linear System
- 17 Technician (1400-2600)-01 (U)**
- i Dip (3 yrs structure) in Electronics from recognised Institute or equivalent qualification and at least 2 yrs exp in repair, servicing and maintenance of computer/T V/Sound equipment or Audio/Video recording, preferably in a Computer firm/ broadcasting/Educational media organisation
- 18 Placement Officer (2200-4000)-01 (U)**
- i PG degree Preference to PG in Applied M Ed /M Ed
  - ii Effective personality with good command in language & excellent communication skill
  - iii Exp in placement services
- 19 Stenographer-04 (S,O,2U)**
- i Graduation (Stenography as a subject) or Diploma in Stenography with exp of 2 years
  - ii Knowledge of wordstar, DTP, MS Office
  - iii Good command in English & Hindi
  - iv Speed 100/40 words in English & 80/30 W P M in Hindi
  - v Produce evidence of professional work
- Note :**
- 1 Separate applications form be submitted for each post
  - 2 The OBC candidates are required to send their non-creamy layer certificate as per Govt Notification No 22/16/12K-2/1995 i.e dated 18, 1995 as amended, otherwise their application will be considered in general category
  - 3 The candidate belonging to SC/ST and OBC are free to apply as general candidates also
  - 4 Mere fulfilling the essential and desirable qualifications will not entitle an applicant to be called for interview
  - 5 The number of posts may increase or decrease
  - 6 Reserve Posts of S&O of SI No. 1, 2 & 9 are advertised thrice, SI No 6, 7 & 8 twice and rest for the first time

**REGISTRAR**



**BANARAS HINDU UNIVERSITY  
VARANASI-221 005**

**NOTIFICATION FOR ENTRANCE TESTS — 1998**

The University will hold Entrance Tests for Admission to the following Undergraduate UET Postgraduate PET courses, Ph.D (Ag) and Advanced Postgraduate Diploma Courses during June 5 to June 22, 1998 for the session 1998-99 at various centres in the country.

**UNDERGRADUATE COURSES-ELIGIBILITY-UET:**

1. 3-Yr. B.A. Hons. Arts : 10+2 or equivalent examination with minimum 45% aggregate marks Born on or after 1-7-76
2. 3-Yr. B.A. Hons. Social Sc. : 10+2 or equivalent examination with minimum 45% aggregate marks Born on or after 1-7-76.
3. 3-Yr. B.Sc. Hons. : 10+2 or equivalent examination with minimum 45% aggregate marks in science subjects Born on or after 1-7-76
4. 3-Yr. B.Com. Hons. : 10+2 or equivalent examination with Commerce/Economics/Maths/Computer Sc. with minimum 45% aggregate marks Born on or after 1-7-76
5. 3-Yr. B.P.E. : 10+2 or equivalent examination with minimum 45% aggregate marks Born on or after 1-7-76
6. 4-Yr. B.Sc. Ag. : 10+2 in Agriculture or science with Physics, Chemistry & Mathematics/Biology with minimum 50% aggregate marks Born on or after 1-7-76
7. 4-Yr. B.F.A. : 10+2 or equivalent examination with minimum 45% aggregate marks Born on or after 1-7-76
8. 3-Yr. B.Mus. : 10+2 or equivalent examination or graduate/postgraduate degree (for details refer information bulletin) with minimum 50% aggregate marks in concerned music practical
9. 3-Yr. Shastri Hons. Madhyama of BHU or 10+2 with Sanskrit or equivalent examination with minimum 45% aggregate marks
10. 1-Yr. B.J. : Graduate under atleast 10+2+3 pattern with minimum 50% aggregate marks or postgraduate with minimum 50% aggregate marks
11. 1-Yr. B.Lib. & Information Sc. Graduate under at least 10+2+3 pattern with minimum 50% aggregate marks or postgraduate with minimum 50% aggregate marks
12. 1-Yr. B.Ed./B.Ed. Spl. : Graduate under 10+2+3 pattern with minimum 50% aggregate/Hons marks or postgraduate with minimum 50% aggregate marks (B.Sc (Ag)/M.Sc (Ag) not eligible)
13. 3-Yr. LL.B. : Graduate under atleast 10+2+3 pattern with minimum 45% aggregate marks

Note : 1 B A Arts and B A Social Sc are available at Faculty of Arts, Social Science, Mahila Maha Vidyalaya and affiliated colleges viz Arya Mahila Degree College, Vasant Kanya Mahavidyalaya, Vasanta College for Women (Rajghat) and DAV Degree College

2 B Com Courses are available at Faculty of Commerce, DAV Degree College and Vasanta College for Women

3 B Ed Course is available at Faculty of Education, Arya Mahila Degree College and Vasanta College for Women

**POSTGRADUATE COURSES-ELIGIBILITY-PET:**

14. M.A. : Arabic, Bengali, Hindi, Kannada, Marathi, Persian, Pali, Sanskrit\*, Telugu, Urdu, Nepali, Ancient Indian History Culture & Archaeology, History of Art, Philosophy, Indian Philosophy & Religion (IPR), Geography, Statistics, Mathematics, Home Science, English B A Hons Under 10+2+3 pattern in the concerned subject with minimum 48% aggregate marks or BA with concerned subject having had studied in all three years
15. M.A. Linguistics As (14) or BA Hons/BA 10+2+3 pattern with PG Diploma in Linguistics or BA Hons/BA 10+2+3 pattern with postgraduation in the language with 48% aggregate marks
16. M.A. German As (14) or BA Hons/BA 10+2+3 pattern with PG Diploma in German with 48% aggregate marks both at graduation and diploma levels
17. M.A. French As (14) or BA Hons/BA 10+2+3 pattern with PG Diploma in French with 48% aggregate marks both at graduation and diploma levels
18. M.A. Chinese As (14) or BA Hons/BA 10+2+3 pattern with PG Diploma in Chinese with 48% aggregate marks both at graduation and diploma levels
19. M.A. Indian Philosophy and Religion As (14) or BA Hons/BA 10+2+3 pattern/Foreign Graduate Degree with PG Diploma in IPR with 48% aggregate marks both at graduation and diploma levels
20. M.A. History of Art As (14) or BA Hons/BA 10+2+3 pattern with PG Diploma in the subject with 48% aggregate marks both at graduation and diploma levels
21. M.A. Economics, History, Political Science, Sociology, Psychology B A (Hons)/BA 10+2+3 pattern with minimum 48% aggregate marks having had studied the concerned subject in all three years
22. M.Sc. Physics, Chemistry, Botany, Zoology, Geology, Geography, Maths, Computer Sc, Home Science, Statistics and Psychology B Sc (Hons)/B Sc 10+2+3 pattern with minimum 48% aggregate marks having had studied the concerned subject in all the three years Chemistry at graduate level is compulsory for admission to M Sc in Botany and Zoology
23. M.Sc. Biochemistry B Sc Hons Chemistry/Biochemistry/B Sc 10+2+3 pattern with Chemistry studied in all three years or B Sc with any two subjects i.e. Biochemistry/Botany/Mathematics/Physics/Physiology/Zoology with minimum 48% aggregate marks
24. M.Sc. (Tech.) Geophysics B Sc Hons/B Sc 10+2+3 pattern with at least Physics and Mathematics and minimum 48% aggregate marks
25. M.Com. B Com Hons/B.Com 10+2+3 pattern with minimum 48% aggregate marks
26. ACHARYA Veda, Vyakaran, Jyotish, Mimansa, Vedanta, Nyayavaisheshika, Prachina Nyaya Shastri Hons/Shastri 10+2+3 pattern with minimum 48% aggregate marks in the concerned subject
27. ACHARYA Sankhyayoga, Puranethasa and Sahitya As (26) or BA Hons 10+2+3 pattern with Sanskrit with minimum 48% aggregate marks
28. ACHARYA Dharmagama As (26) or BA Hons 10+2+3 pattern with 2 Year PG Diploma in Agama Tantra with 48% minimum aggregate marks at graduation level
29. ACHARYA Boudha Darshan As (26) or BA Hons 10+2+3 with Sanskrit/Pali with minimum 48% aggregate marks

30. **ACHARYA Jain Darshan** As (26) or BA Hons 10+2+3 pattern with Sanskrit/Prakrit with minimum 48% aggregate marks
31. **1-Year M.J.** : BJ with minimum 50% aggregate marks after graduation under at least 10+2+3 pattern or BJ with minimum 50% aggregate marks after postgraduation
32. **2-Year M.P.E.** : 3-Year B P E course/Graduation under at least 10+2+3 pattern with 1-Year degree/diploma in Physical Education/3-Year B Sc in Physical Education, Health Education & Sports with minimum 50% aggregate marks at graduation level
33. **1-Year M.Lib. & Inform. Sc.** : B Lib & Inform Sc with minimum 50% aggregate marks
34. **2-Year M.A. Museology** M A History/A I H C & Arch /Sanskrit/History of Art with minimum 50% aggregate marks
35. **2-Year LL.M.** : 3-Year LL B after graduation under 10+2+3 pattern or 5-Year LL B under 10+2+5 pattern with minimum 50% aggregate marks
36. **1-Year M.Ed.** Graduate under 10+2+3 pattern/Postgraduate with B Ed /B Ed Spl Theory with 50% aggregate marks in B Ed theory
37. **2-Year M.F.A. Painting, Applied Arts, Plastic Arts, Pottery & Ceramics, Textile Design** B F A in the concerned subject under 10+2+4 or 10+5 pattern with minimum 50% aggregate marks
38. **2-Year M. Mus. Vocal Instrumental Music** B Mus Vocal/Instrumental or B A Hons 10+2+3 pattern with music practical with 50% aggregate marks (refer information bulletin)
39. **M.Sc. Ag. Agri Economics, Agronomy, AH & Dairy Sc , Entomology & Agri Zoology, Extension Education, Genetics and Plant Breeding, Horticulture, Mycology & Plant Pathology, Plant Physiology, Soil Sc & Agri Chem** 4 Year B Sc Ag with 50% aggregate marks or OGPA 2 5/4, 3 5/5, 4 0/6, 6 5/10
40. **3-Year M.C.A.** : Graduate 10+2+3 pattern with minimum 50% aggregate marks having had studied mathematics at 10+2 level
41. **Full time Advanced Diploma in Archaeology, Numismatics** M A AIHC Arch /AIHC
42. **Full time Advanced Diploma in Indian History & Culture, History of Art** Graduate 10+2+3 pattern
43. **Full time 2-Year PG Diploma Hindi Journalism** Postgraduation with Hindi as subject at 10+2 level
44. **Full time 2-Year Advanced Diploma Agama Tantra** Graduation with Philosophy, Religion, Sanskrit, History & Culture
45. **Ph.D. (Ag.) Agri Economics, Agronomy, AH & Dairy Sc , Entomology & Agri Zoology, Extension Education, Genetics and Plant Breeding, Horticulture, Mycology and Plant Pathology, Plant Physiology and Soil Sc & Agri Chem** M Sc (Ag )/M Sc or equivalent in the concerned subject with 50% aggregate marks or an O G P A of 2 5/4, 3 5/5, 4 5/6, 7/10 under the course credit system and should not have secured more than one III Division in his/her academic career

\*Shastri (Hons ) shall be eligible for admission to M A Sanskrit

**Candidates appearing in the respective qualifying examinations may also apply as per conditions laid down in the bulletin.**

**RESERVATION** : (i) 15% and 7.5% seats are reserved for SC/ST who are required to have pass marks only in the qualifying examination

(ii) 3.0% seats reserved for Orthopaedically Handicapped except in B Sc (Ag ) M Sc (Ag ) B P E , M P E

(iii) 50% of seats shall be reserved for BHU students in PG courses except in MCA and Ph D (Ag )

**FOR DETAILS REFER INFORMATION BULLETIN.**

**CENTRES** : Varanasi, Delhi, Calcutta, Chennai, Jaipur, Bombay and Bhopal

**NOTE** : UNIVERSITY RESERVES THE RIGHT TO CANCEL ANY OF THE CENTRES EXCEPT VARANASI.

#### **INFORMATION BULLETIN AND APPLICATION FORM**

**COST** : It includes cost of information bulletin, application form and the test fee

UET Rs 200/- for general, Rs 100/- for Shastri general and Rs 60/- for SC/ST candidates

PET Rs 250/- for general, Rs 200/- for Acharya, Rs 125/- for BHU students, Rs 75/- for SC/ST candidates

Rs 300/- for MCA general and Rs 150/- for SC/ST candidates

Rs 300/- for Ph D (Ag ) for all candidates

Note - (i) **Add Rs. 50/- as outstation centre charges**, if opting to appear at a centre other than Varanasi

(ii) **Add Rs. 30/- towards registered postal charges** against postal requisitions

(iii) Remit the required fee through a State Bank of India Demand Draft/Bankers Cheque drawn in favour of Controller of Examinations, BHU payable at State Bank of India, BHU Branch, Code No 0211

The Information Bulletin and Application Form can be obtained through post as also at the counter of Controller of Examinations Office, BHU against Cash payment. A request for the same by Registered post must be accompanied with a SBI Demand Draft/Bankers Cheque for the required amount as per details given above along with a self addressed unstamped envelope (31.5 X 26.5 cm) indicating on it the course applied for and addressed to Controller of Examinations, BHU, Varanasi-221005. This shall also be available at Multipurpose Hall Counter of Controller of Examinations Office on depositing State Bank of India Bankers Cheque for the required amount between 11.00 am to 2.00 pm on all University working days.

**NOTE** : (i) University shall not be responsible for any delay/loss of application form or correspondence in postal transit.

(ii) Separate application forms are required to be sent for each course.

#### **FOREIGN NATIONALS :**

5% supernumerary seats in each course shall be available for foreign nationals who have passed their qualifying examinations from abroad. Such foreign nationals are exempted from appearing in BHU entrance test.

#### **IMPORTANT DATES :**

Commencement date of sale of application forms from counter and by post	06-3-98
Last date for receipt of requisition for sending the application form by registered post	25-3-98
Last date for sale of application forms through counter	14-4-98
Last date for receipt of duly completed application forms both by post as well as on the counter	15-4-98

**REGISTRAR**



## Indira Gandhi National Open University Electronic Media Production Centre Training Workshops-1998

Name Of The Workshop	Date	Number Of Participants	Target Group	Course Fee	Last Date Of Submitting Nominations
Advanced Lighting Techniques for TV Studio	15-17 March	10	Camerapersons Photographers/ Engineering Professionals	Rs 4000/-	28 February
Chroma Key	10-11 April	10	Camerapersons/ Engineering Professionals	Rs 3000/-	10 March
Presentation Techniques	17-18 April	12	Academics/ Production Professionals	Rs 2000/-	15 March
Orientation Programme for Planners & Administrators In Distance Ed	8-9 May	12	Senior level Executives/ Planners/ Administrators (Educational Institutions)		10 April
Graphics for TV	22-23 May	10	Graphic Artist/Designer	Rs 3000/-	20 April
Modular Set Designing	5-6 June	10	Set Designers	Rs 3000/-	5 May
Interview Techniques	12-13 June	12	Academics/ Media Professionals	Rs 2000/-	10 May
For further details contact : Director, EMPC, IGNOU, Maidangarhi, New Delhi-110 068 Telephones : 6868407/6857063/6857064/6857065 Fax : 6857079/6989076					



## UNIVERSITY OF DELHI (FACULTY OF MEDICAL SCIENCES) ADMISSION TO MBBS/BDS COURSES-1998

Applications are invited on the prescribed form for admission to MBBS/BDS Courses so as to reach the Asstt. Registrar, Faculty of Medical Sciences, University of Delhi (6th Floor, V.P. Chest Institute Building), Delhi-110 007 by Thursday the 2nd April, 1998.

### ELIGIBILITY REQUIREMENTS FOR ENTRANCE EXAMINATION AND ADMISSION :

Candidate who has passed/appeared in 12th Class Examination under 10+2 system conducted by the Central Board of Secondary Education/ Council for the Indian School Certificate Examination/Jamia Millia Islamia, New Delhi (except Patrachar Vidyalaya and Open Schools) with required subjects i.e. Physics, Chemistry, Biology and English (Core) securing minimum 50% marks in aggregate in these subjects (For SC/ST candidates 40% marks in aggregate in the required subjects) from the recognised schools conducting regular classes situated within the National Capital Territory of Delhi only. Female SC/ST candidates who have passed the qualifying examination (10+2) from Outside Delhi are eligible to appear in the Entrance Examination for admission to Lady Hardinge Medical College only.

The reserved seats for Government of India Nominees and Children/Widows of Armed Personnel disabled/killed in action for the MBBS Course will be filled up in the manner mentioned in the Bulletin of Information.

The Entrance Examination for admission to MBBS/BDS Courses will be held on 23rd May, 1998 (Saturday).

Application form alongwith Bulletin of Information can be had from (the office of the Faculty of Medical Sciences, University of Delhi) 1st Floor, V.P. Chest Institute Building, University of Delhi, Delhi-110 007 and from the office of the Dean/Principal, Maulana Azad Medical College/Lady Hardinge Medical College, New Delhi/University College of Medical Sciences, Shahdara, Delhi-110 095 on cash payment of Rs 50/- or (by post Rs 60/-) by sending a Bank Draft drawn in favour of the Registrar, University of Delhi, payable at State Bank of India, Delhi University Branch from 3rd March, 1998 (between 10 00 A M and 1 00 P M ) on working days. No request for issue of Bulletin of Information by post will be entertained after 13th March, 1998.

Application accompanied by the Bank Draft of Rs 200/- (Non-refundable) drawn on the State Bank of India, Delhi University Branch, as examination fee in favour of the Registrar, University of Delhi, must reach the Asstt. Registrar, Faculty of Medical Sciences, University of Delhi, on or before 02.04.1998 either in person or by registered post. Under no circumstances any application received after the prescribed date will be entertained.

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED.

K.K. PANDA  
REGISTRAR

Delhi, March 1, 1998



## INDIAN INSTITUTE OF ASTROPHYSICS BANGALORE-560 034

Telephone : 91-80-5530672 to 676

Telefax : 91-80-5534043

e-mail : bgs@iiap.ernet.in

### ADMISSION TO THE Ph.D. PROGRAMME — 1998

Applications are invited for Junior Research Fellowships for the Institute Ph.D. Programme. Selection will be made on the basis of a written test and an interview to be held around end of June 1998 at the Institute campus in Bangalore

**RESEARCH FIELDS :** Front-line research is being pursued at the Institute in Solar Physics including solar system studies and solar terrestrial relationships; Stellar Physics which includes star formation, stellar evolution, novae, supernovae, binary stars and stellar clusters; the interstellar Medium, Galaxies, their structure and dynamics; High Energy Astrophysics which includes neutron stars, black holes, quasars and cosmology; Non-Accelerator Particle Physics and Gravitation.

**Facilities :** The Institute has excellent facilities for carrying out research in a wide range of topics covering theoretical and observational Astronomy and Astrophysics. It also has a vigorous programme for the development of state of the art instrumentation in related research areas. Computing facilities include a cluster of high performance work stations and personal computers which are networked and connected to the internet through a high speed satellite link. Future plans of the Institute include building a High Altitude Himalayan Observatory equipped with medium and large infrared/Optical Telescopes and laboratory facilities in a new campus at Hoskote near Bangalore. The headquarters of the Institute are located in Bangalore. In addition, the Institute has three field stations. (1) the Vainu Bappu Observatory in Kavalur, equipped with a 2.34 m and other optical telescopes that are used for research in stellar, galactic and extra-galactic astronomy. (2) Kodaikanal, with major facilities for solar terrestrial research that include the Solar Tower Tunnel Telescope, Spectrographs, Ionosondes etc., and (3) Gauribidanur, which has a Radio Heliograph for imaging the Sun at decametric wavelengths. Research students may be accommodated in any one of the campuses depending on the nature of their research projects

**PROGRAMME :** The Ph.D. Programme is tenable for a total period of five years. The selected candidates will undertake course work during the first year. On successful completion of the course, they can register for the Ph.D. Degree. The academic programme for the current year will commence in August 1998

**ELIGIBILITY :** First Class M.Sc. in Physics/Mathematics/Astronomy or M.E./M.Tech. in Electronics/Electrical/Engineering/Instrumentation/Automation/Computer Sciences. Those candidates whose results are expected by July 1998 may also apply

**SCHOLARSHIP :** Selected candidates will be paid a monthly stipend of Rs. 2500/- for the first two years and subsequently Rs. 2800/-. They will be offered hostel accommodation and will be eligible to subscribe to the Institute's Contributory Medical Scheme. They will also receive a book grant of Rs. 2500/- per year. These amounts are likely to be revised upwards

**APPLICATIONS :** Application forms can be obtained by writing to the Deputy Administrative Officer, I.I.A., Bangalore-560 034, before April 3, 1998. The request for an application form should be accompanied by a self-addressed envelope of size 30 cm x 25 cm and a crossed Postal Order/Money Order for Rs. 20/- payable to : The Director, Indian Institute of Astrophysics, Bangalore. Applications should be sent to The Chairman, Board of Graduate Studies, Indian Institute of Astrophysics, Koramangala, Bangalore-560 034, superscribing the envelope 'Application for JRF'. The last date for receipt of applications is May 1, 1998. The candidates called for interview will be reimbursed travel expenses by sleeper class and will also receive a halting allowance for the date of the interview. Further information or inquiries about the programme can be obtained by writing to the above address or sending e-mail to bgs@iiap.ernet.in.





# ANNAMALAI UNIVERSITY

## B.E./B.E. (Chem.)/B.Sc (Agri.)/B.Sc (Hort.) Degree Courses Entrance Examinations — 1998

### NOTIFICATION

No. K2/707/Advt No. 2/98

Annamalainagar,  
20-02-1998

The Entrance Examinations for admission to B E /B E (Chem )/B Sc (Agri ) and B Sc (Hort ) courses of the Annamalai University for the year 1998-99 are scheduled to be conducted by the University

Appearance in the Entrance examinations is compulsory for the candidates seeking admission to these courses

These Entrance examinations are for the candidates of Tamil Nadu and for those who satisfy the nativity/domicile requirements specified by the University for the admission to these courses

This notification relates only to the Entrance examinations. Candidates are advised to refer to separate notification to be issued around second week of May 1998 by the University inviting applications for admission to the various courses

Selection to various courses will be governed by the procedures laid down by the university

### COURSES OFFERED

Engineering B E Civil/Civil & Structural/Mechanical/Mechanical & Production/Electrical & Electronics/Electronics & Instrumentation/Computer Science & Engineering/Chemical Engineering

Agriculture B Sc (Agriculture)/B Sc (Horticulture)

### GENERAL INSTRUCTIONS

Candidates who are appearing for Higher Secondary or equivalent qualifying examinations during March-May 1998 and candidates who have already passed HSC or other equivalent qualifying examinations are eligible to apply for these entrance examinations

The Entrance examinations will be conducted in the following schedule and subjects

Paper 1 Biology (Botany & Zoology) — (08-05-98 Forenoon)

Paper 2 Physical Sciences (Physics & Chemistry) — (08-05-98 Afternoon)

Paper 3 Mathematics — (09-05-98 Forenoon)

\*\*(Questions for the above examinations will be based only on the syllabi and text books prescribed for the second year of the Tamil Nadu HSC (Academic course)

Candidates who intend to seek admission for the Engineering courses only should appear for papers 2 & 3 only, candidates who intend to seek admission for Agriculture or Horticulture courses only should appear for papers 1 & 2 only, candidates seeking admission for both engineering and agriculture or horticulture courses should appear for all the three papers

Admission will be made on the basis of marks obtained in the relevant subjects in the qualifying examination (HSC or equivalent) and in the entrance examinations, with the weightage of marks 200 and 100 respectively

### COST OF APPLICATION FORM

- i) SC/ST candidates of Tamil Nadu are exempted from paying cost of application form and entrance examination fee
- ii) For all the others the cost of application form is — Rs 80/-

**IMPORTANT NOTE** Each SC/ST candidate of Tamil Nadu has to produce a letter containing the following particulars for getting the application form 1) Name 2) Address 3) School/Polytechnic last attended 4) Whether eligible for A U Entrance examinations 5) Belonging to SC/ST 6) Signature of applicant and 7) This must be duly attested by the Head of the Institution last attended/attending (The forms issued to them cannot be used by others)

### METHOD OF PAYMENT

Application forms can be obtained in person by cash payment at the University cash counter on all working days

To get application form by post send a requisition letter along with a demand draft for Rs. 80/- drawn in favour of The Registrar, ANNAMALAI UNIVERSITY, Annamalainagar-608002 obtained on or after 23-02-98 from Indian Bank/Bank of Madura/State Bank of India, payable at Annamalainagar or Chidambaram and a self-addressed kraft envelope of size 35 cm x 15 cm with stamps affixed to the value of Rs 8/- For SC/ST students also send the kraft envelope of size specified with stamp affixed to the value of Rs 8/- along with request indicated earlier Draft from any other bank will not be accepted Candidates are advised to write their name and address on the reverse of the demand draft

Application forms will be sent only by ordinary post and the University will not be held responsible for non-receipt of application forms

Application forms will be issued from — 02-03-98

Late date for issue and receipt of filled in application form in the university — 02-04-98

Dates of entrance examinations — 08-05-98 FN & AN & 09-05-98 FN.

**DR. PL SABARATHINAM**  
**REGISTRAR**



**NATIONAL DAIRY RESEARCH INSTITUTE**  
(Deemed University)  
(Indian Council of Agricultural Research)  
KARNAL-132 001 (Haryana)

**ADMISSION NOTICE 1998-1999**

A competitive written examination on all India basis for admission to the following courses will be held at Karnal, Bangalore and Kalyani (West Bengal) centres (except for Ph.D. which will be held at Karnal only) on 18th June, 1998.

**(A) Ph.D. Dairying**

Dairy Microbiology, Dairy Chemistry, Dairy Technology, Dairy Engineering, Animal Biochemistry, Animal Genetics & Breeding, Livestock Production and Management, Animal Nutrition, Animal Physiology, Dairy Economics and Dairy Extension Education

**Eligibility**

Master's degree in relevant area with 60 per cent marks (55 per cent marks for SC/ST candidates) or equivalent GPA

**(B) National Dairy Diploma (Dairy Technology)**

At Southern Regional Station of National Dairy Research Institute, Bangalore

**Eligibility**

10+2 or its equivalent examination with Physics, Chemistry, Mathematics and English from a recognised Board/University, with 50 per cent marks (45 per cent for SC/ST candidates) or equivalent GPA in the aggregate of Physics, Chemistry and Mathematics

**Institute Scholarship :**

All candidates (except Inservice candidates) selected for admission to Ph.D. Dairying are awarded Institute Scholarship @ Rs 2200/- per month alongwith admissible contingent grant

**HOW TO APPLY**

Information Bulletin and application form can be obtained by post from Registrar, National Dairy Research Institute, Karnal-132 001 (Haryana) by submitting a Bank Draft for Rs 60/- drawn in favour of "ICAR UNIT, NDRI, KARNAL" payable on any nationalised Bank at Karnal. Cheques/Postal Orders/Money Orders will not be accepted. The candidates should also send a self-addressed envelope of minimum size of 20 cm x 25 cm (8" x 10") with Rs 9/- worth stamp (Rs 19/- worth stamp, if required by registered post) affixed and subscribing the course on the left hand top corner

While requesting for Information Bulletin and Application Form, following information should be given.

- 1 Name (in capital letters)
- 2 Full postal address with PIN code (in capital letters)
3. The Course in which the Candidate wants admission (State only one i.e. Ph D or Diploma)
- 4 Details of the Bank Draft enclosed i.e. (a) Name of Issuing Bank; (b) Bank Draft No., date and Amount i.e. Rs 60/-

Application Forms for Sale will be available from 1.4.1998 to 13.5.1998 (By Post) and upto 18.5.1998 at the Counter of State Bank of Patiala, NDRI, Karnal/Cashier, NDRI, Karnal

**For details including number of seats in each course, seats reserved for SC/ST and last date for receipt of applications, kindly refer to Information Bulletin 1998-99.**

**Note . All the seats in B.Tech. (DT) and Master in Dairying Programmes shall be filled through an All India Entrance Examination to be conducted by the Indian Council of Agricultural Research. No separate Entrance Examination shall be conducted by N.D.R.I. for these courses.**

# CLASSIFIED ADVERTISEMENTS

## GAUHATI UNIVERSITY GUWAHATI-14 ADVERTISEMENT NO. T/98/1

Applications in the prescribed form are invited for the following posts of teacher

Applicants will have to obtain the prescribed application forms on payment of Rs 25/- (Rupees twenty five) in the University cash counter or on requisition accompanied with a crossed Demand Draft (SBI) of Rs 25/- (Rupees twenty five) drawn in favour of the Registrar, Gauhati University, Guwahati-14, from the office of the undersigned (Establishment Branch) on or before 31.3.98. during office hours

The duly filled up application with full particulars in quadruplicate along with an application fee of Rs 75/- (Rs 38/- in case of SC/ST candidates) to be paid in the manner indicated above must reach the undersigned on or before 30.4.98.

Applications received after the last date, incomplete applications, Money order, Indian Postal Order as application fees and photo copy of the prescribed application form will not be accepted

Persons in employment should apply through proper channel or furnish "No Objection Certificate" from their employer

Candidates shall be required to appear before the Selection Committee at their own cost, if and when called for

Sl. No.	Name of posts	Department	No. of posts	Field of specialization
1	2	3	4	5
1	Professor	Biotechnology	1	OPEN Desirable Feed Biotechnology/Gen/Engineering
2	Professor	Education	2	(i) OPEN (ii) Educational management/Psychological testing and measurement
3	Professor	Hindi	2	(i) Comparative literature with profound knowledge of Assamese literature and culture (ii) Medieval poetry (BHAKTI KAL)
4	Professor	Lib & Inf Sc	1	E Q - M Lib Sc Preference will be given to those candidates having exposure to computer application in Lib & Inf Services. Ten years experience of teaching as a full time teacher and/or research
5	Professor	Philosophy	1	OPEN
6	Professor	Political Sc	1	OPEN Knowledge of Government and Politics in North East India
7	Professor	USIC	1	Ph D in Physics having specialization in Electronic & Radio Physics in M Sc level with experience in design fabrication of micro-processor based electronic instrumentation should have published work of high quality in National/International Journals/proceedings. The candidate should be engaged in research with 10 years of experience in postgraduate teaching and/or research at doctoral level and should have produced at least one Ph D to his/her credit
8	Reader	Botany	1	Mycology and Plant Pathology
9	Reader	Biotechnology	3	(i) OPEN Master degree in Biotechnology, Biological Science Experience in Research work related to Biotechnology (ii) Master degree in Biotechnology/Biological Sciences Experience in DNA finger printing work/molecular biology (iii) Master degree in Biotechnology/Microbiology Experience in Animal biotechnology/Industrial biotechnology
10	Reader	Business Administration	1	OPEN MA/M Sc/M B A /M Com /M E
11	Reader	Environmental Science		OPEN
12	Reader	Electronic	1 (Temporary)	Digital signal processing
13	Reader	Folklore	1	OPEN Master degree in Social Science/humanities stream
14	Reader	Foreign Language	1	French
15	Reader	Geography	1	Geomorphology with good Mathematical and

16	Reader	History	2	(i) Cartographic background Anciant Indian History
17	Reader	Linguistics	1	(ii) OPEN Structural and/or post structural/pragmatic theory Transformation-Generative and/or Government and binding (Principle and parameters theory) and/or minimalism OR Lexical-semantic and/or cognitive theory Preference will be given to applicants working on Assamese or one of the Tibeto Burman Language spoken in Assam Pure Mathematics Radio Physics & Electronics
18	Reader	Mathematics	1	(i) Vedo
19	Reader	Physics	1	(ii) Darshana
20	Reader	Sanskrit	2	OPEN
21	Reader	Statistics	1	(i) Physical Anthropology Preference will be given to candidate having experience of research and field work in North East India
22	Lecturer	Anthropology	2	(ii) Prehistoric Archaeology Preference will be given to candidate having experience of research and field work in North East India Modern Assamese Poetry M A in Linguistics with MA in Bengali, Major in Bengali at degree level OR M A in Linguistics with M A in Sanskrit and capable of teaching Bengali literature as well Plant Taxonomy
23	Lecturer	Assamese	1	(i) M Sc in Biotechnology
24	Lecturer	Bengali	1	OR Molecular Biotechnology Desirable experience in Genetic Engineering
25	Lecturer	Botany	1	(ii) M Sc in Feed Science & Technology with experience in Feed Biotechnology
26	Lecturer	Biotechnology	3	(iii) M Sc in Biotechnology/Life Science with specialization in O immunology or M Sc in Biophysics with experience in Computer Sc OPEN
27	Lecturer	Computer Science	1	(i) M Com with specialization in Finance Group Banking Major Honours at degree level will be prefered
28	Lecturer	Commerce	2	(ii) M Com with specialization in Finance/Marketing Management at degree level will be preferred Television News Production
29	Lecturer	Communication & Journalism	1	Physical Chemistry
30	Lecturer	Chemistry	1	(i) Control System
31	Lecturer	Electronic	2	(ii) (Temporary) Signal Processing or Microprocessor OPEN
32	Lecturer	Education	1	Linguistics
33	Lecturer	English	1	M A in Folklore or Humanities stream Evidence of Academic attainment in Folklore with specialization in Folk literature of Assam including Tribal material
34	Lecturer	Folklore	1	Sedimentary petrology with reference to the Tertiary sediment of the North Eastern Region Preference will be given to those candidates having knowledge in computer application Regional planning with advanced in degree/Diploma/ Training & Research in the field or Social geography & Research in the field M Lib Preference will be given to those candidates having exposure to computer application in Library & Information services
35	Lecturer	Geological Science	1	(i) Radio Physics and Electronics
36	Lecturer	Geography	1	(ii) Spectroscopy
37	Lecturer	Lib & Inf Science	1	OPEN
38	Lecturer	Physics	2	
39	Lecturer	Psychology	1	

M.C. Sarma  
REGISTRAR

**BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY**  
(A CENTRAL UNIVERSITY)  
VIDYA VIHAR, RAE BARELI ROAD  
LUCKNOW-226 025

Applications for the following posts are invited on the prescribed format to be sent to the Registrar latest by 30th April 1998.

Post/pay scale	Schools/Centres	No. of posts	
		U.R.	O.B.C.
(a) <b>Professor</b> (4500-7300)	i Information Science & Technology	01	—
	ii Ambedkar Studies	01	—
	iii Vocational Studies	01	—
(b) <b>Reader</b> (3700-5700)	i Information Science & Technology	01	—
	ii Vocational Studies	01	—
	iii Human Rights	01	—
(c) <b>Lecturer</b> (2200-4000)	i Information Science & Technology	01	—
	ii Rural Technology (Horticulture)	—	01

**GENERAL CONDITIONS :**

- (1) The salary, total emoluments and minimum qualifications will be as per U G C norms. Highly qualified and experienced candidates may be considered for advance increments.
- (2) The forms and relevant details may be obtained upto 20th April, 1998, either in person or by post on applying to this office (indicating the advt No. and name of the post) and sending a self addressed envelope of size 23x10 cm with stamps of Rs. 12/- Other things being equal, preference will be given to SC/ST candidates.
- (3) A separate application must be submitted for different posts.

**REGISTRAR**

**INDIAN INSTITUTE OF TECHNOLOGY, DELHI**

Advertisement No. I/98 (E-1) for  
Academic Positions

FACULTY POSITIONS available at the level of Assistant Professor/Lecturer in the DEPARTMENTS of Applied Mechanics, Civil Engg., Chemical Engg., Chemistry, Computer Sc. & Engg., Elect. Engg., Humanities & Social Sc., Mathematics, Mech. Engg., Textile Technology, Management Studies (also at the level of Professor/Associate Professor), and Industrial Tribology Machine Dynamics & Maintenance Engineering Centre (ITMMEC) of the Institute. For details see 7th March, 1998 issue of Employment News or contact

Assistant Registrar (Estt. I), I.I.T., Hauz Khas, New Delhi-110 016 enclosing a self addressed stamped (Rs. 3/-) envelope  
FAX : 91-11-6862037.

**Swami Ramanand Teerth  
Marathwada University  
Nanded-431 602**

**CORRIGENDUM**

Ref Advt No TP-1/98 dated 23 February '98 in respect of teaching posts, published in University News of 23 February 1998. The last line of Item 08 may please be read as follows :  
"Blank application forms are available for sale from 2nd March to 10th April, 1998."

**REGISTRAR**



**UNIVERSITY OF LUCKNOW**  
**M.Sc. (TECH.) PHARMACEUTICAL CHEMISTRY COURSE**

The Department of Chemistry, Lucknow University is running a three years **M.Sc. (Tech.) Pharmaceutical Chemistry Course**. The objectives of the course are to prepare top R & D executives for Drugs & Pharmaceutical Industry and R & D centres of National Laboratories.

**ELIGIBILITY :** Students having passed B.Sc., three years degree course with Chemistry in the 3rd year examination with a minimum of 45% marks. Candidates having appeared or appearing in the final examination of B.Sc. three year degree course are also eligible to apply for written test. The admission will be done on the basis of a written test, G.D. & Interview. The written admission test will be held on **May 10, 1998 (10-05-98)** at Lucknow University, Lucknow.

**FOREIGN/NRI/NRI SPONSORED CANDIDATES :** Limited seats are reserved for such candidates. There is no admission test for such candidates.

**BROCHURE & APPLICATION FORMS :** Application forms and information brochure can be obtained from Course Coordinator, **Prof. R.S. Varma** in the Chemistry Department, Lucknow University, Lucknow-226 007 from **March 16, 1998** by submitting Demand Draft of Rs. 350/- in favour of "**L.U. Pharmaceutical Chemistry Course**". Last date for accepting completed application form is **March 31, 1998**.

- \* Reservation of seats as per rules applicable in the university
- \* Application forms fee shall not be refunded in any case.

**Prof. (Ms.) Anakshi Khare,  
DIRECTOR**

**M.Sc. (TECH.) PHARMACEUTICAL CHEMISTRY COURSE  
&  
HEAD OF THE CHEMISTRY DEPARTMENT**

# **EDUCATION INTERNATIONAL**

## **INDIA**

**A venture of the Ministry of Human Resource Development, Govt. of India,  
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## U.P. Management Combined Admission Test UPMCAT - 1998

**Combined Admission Test for Admission in MBA, PGDBA,  
PGDBM, MCA, BHM, etc. for 1998-99 Academic session  
conducted by**

**MJP Rohilkhand University, Bareilly**

The Combined Admission Test for preparation of merit list for admission in about 4700 seats (Free and payment categories) in the Management courses (MBA, PGDBA, PGDBM, etc.), MCA and Bachelor of Hotel Management (BHM) being run in the Universities, affiliated colleges and private Institutions and approved by All India Council for Technical Education will be conducted at various centres in UP and almost at all capitals of other States during May 25-27, 1998

### ELIGIBILITY:

- (a) **For Management Courses:** Graduate of any discipline with 50% marks (45% in case of SC/ST/OBC).
  - (b) **For M.C.A.:** Graduate securing 50% marks (45% in case of SC/ST/OBC) with mathematics as one of the subjects at 10+2 level from any recognized university.
  - (c) **For Bachelor of Hotel Management (BHM):** Intermediate of UP Board or 10+2 of C.B.S.E. or equivalent with 50% marks (45% in case of SC/ST/OBC).
- Those candidates appearing in final year examination may also apply but their admission will be subject to the production of proof of minimum prescribed eligibility marks.

### PROCEDURE OF ADMISSION:

Admission in above courses will be made on the basis of merit prepared after written test (interview and group discussions for management courses only) as per schedule

May 25, 1998	09 00 A.M. - 11.30 A.M.	MBA/PGDBA
May 26, 1998	09.00 A.M. - 12 00 Noon	MCA.
May 27, 1998	09 00 A.M. - 11 30 A.M.	Hotel Management (BHM)

### CENTRES:

15 in U.P. and 13 in other parts of the country.

### HOW TO APPLY:

Candidates desirous to appear in the test may obtain the Information Brochure (containing full details) along with Application Form from the office of the **Controller (UPMCAT), IASE Bhavan, MJP Rohilkhand University, Bareilly** on cash payment of Rs 750/- (this includes test fee) from March 5, 1998 onwards during office hours on all working days. It can also be obtained on payment of Rs 760/- in cash from various branches of **Union Bank Of India** at Agra, Allahabad, Ambala, Bareilly, Bhopal, Dehradun, Faizabad, Ghaziabad, Gorakhpur, Jaipur, Jaunpur, Jhansi, Kanpur, Lucknow, Meerut, Moradabad, New Delhi, Nainital, Patna, Rampur, Varanasi.

The Brochure can also be obtained from office of the Registrar of the Universities of Agra, Allahabad, Faizabad, Garhwal, Gorakhpur, Jaunpur, Jhansi, Kanpur, Kumaun, Kashi Vidyapeeth, Lucknow, Meerut and Meharishi Institute Noida on payment of Rs. 760/- in the form of Demand Draft.\*

It may be obtained by post on remitting a demand draft\* of Rs 775/- For this an envelope containing a self-addressed slip along with the request for the Brochure & draft should be sent to the **Controller (UPMCAT) IASE Bhavan, MJP Rohilkhand University, Bareilly -243006 (UP)**

### RECEIPT OF APPLICATION:

The completed application form must be submitted to the Controller (UPMCAT) through Registered / Speed Post on or before April 10, 1998. \* In favour of "FINANCE OFFICER, MJP Rohilkhand University", payable at Bareilly

### IMPORTANT NOTE:

- (1) As per U.P. Govt. order and concurrence of AICTE Admission in above courses for 1998-99 session will be made through this Test only except NRI seats which will be made by respective University / College / Institution. Direct admission by any one other than this is against AICTE directions
- 2. Brochure will be available through Demand Draft only (except from Banks and Controller's office).

**CONTROLLER (UPMCAT)**  
**MJP Rohilkhand University, Bareilly**